

# ITEMS OF INTEREST.

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## ORIGINAL COMMUNICATIONS.

### SOUTHERN DENTAL ASSOCIATION.

*Reported by Mrs. J. M. Walker.*

[CONTINUED FROM PAGE 657.]

HYGEIA HOTEL, OLD POINT COMFORT, VA.,

August 2d to 6th, 1894.

#### HYGIENE.

*Prof. R. R. Freeman, M.D., D.D.S., Nashville, Tenn., Vanderbilt University.*

Hygiene is the law of health applied to life, whereby a man may come to his full vigor of life, and accomplish that measure of usefulness and enjoy that happiness which human existence may afford.

A knowledge of this science will secure the means of battling with the conditions likely to produce discomfiture, pain, sickness, and death, till we are more prepared to enter into that next great state of action. Happy is the man who finds the real object of his being, and shapes his lifework accordingly.

To appreciate the present relation of life and secure its greatest benefits, man must recognize his dual relation and act on the hypothesis of a spiritual existence.

Born the weakest of animal creation, there is in man a consensus of power. There is no created thing on earth above him. While the mysteries of the future may startle and appall, there lingers in the breast a consciousness not only that I am, but that I am to be. Rob him of this faith, and we might well ask, "Is life worth living?"

Evolution proclaims the survival of the fittest. A more familiar adage has it, "Self preservation is the first law of nature." All of which may be true as relates to mere animal creation. But man is more than animal. He is subject to a higher moral law. The light of revelation has taught him to help the weak, succor the needy, and bind up the wounds of the afflicted. He that will cheerfully lay his hands to this work, will catch inspiration promised from a higher source, and learn of the doctrine which proclaims the fatherhood of God and the brotherhood of man.

Mortality and morality stand in no uncertain relation. The violation of law is sure to entail its calamitous results, be it against person, church, or state. Man stands as a free and rational moral agent, and must learn responsibilities. Life is what he makes it. Health, happiness, and prosperity are only attainable through the application of nature's laws. Time

was when the preacher was thought to care only for the soul and teach men how to reach heaven when they died, while the doctor's office was to prolong our being here by ministering to the body when it was sick.

The Great Physician, while He taught the value of the soul, taught also that its temple was not to be neglected. While He opened up the way of light, life, and salvation to the view of man, and revealed some of the glories of the heavenly home, He also declared to His followers that the salvation of both soul and body was only to be obtained by the good we do in this life to our fellows. There is not a function of the body, nor an emanation from the mind, but fills us with pleasurable sensations when they operate in harmony and conform to nature's laws.

We of the dental profession need play no insignificant part, and must help to make it easy for those we serve to realize these blessings. Notice the signs of the times, and see where we are tending. Hardships and calamities frequently are but blessings in disguise. The present great unrest in our land—in fact, throughout the whole world—is but the throes of nature, preparing for the birth of stranger things, perhaps, than our philosophy has dreamed of. The world is growing wiser; people are being educated; even our children are becoming philosophers, and will astonish us often with evidences of their knowledge of the issues of the day, and the movements going forward for the betterment of man. The nations of the globe are sending forth their representatives. Its wise men are assembling, and the object of their counsels, the subject of their thought, is to loosen us from our shackles and give to man the mastery he may attain through the science of hygiene.

From time immemorial frauds and unscrupulous men have taken advantage of the superstitions and weak mental conditions of man. Learned physicians sometimes cast about themselves a halo of mystery for selfish purposes, and pretenders deceive us, but the light of truth is fast dispelling the darkness, and honest, conscientious men and thinkers, it may be hoped, will need no longer dread the opprobrious epithets of crank and dreamer. There is power in enlightened intelligence, and in the study of physiology and hypnology, which, if our professional brethren rightfully apply, will hasten the reign of our lovely queen, Hygiea.

Why should our bodies and the maintainance of health be treated as of less importance than the esthetic arrangement and adornment of the dwellings we inhabit? We see to-day, in the so-called higher walks of life, men who make it their business to instruct in these minor matters. In my own modest city there is one who proposes, for a fair consideration, to give an evening call of inspection, and suggest, in most minute detail, how all apartments of the household should be conducted and arranged to give esthetic effect and give you standing in the social realm.

We may not hope, in the present state of man, to dispense entirely with the services of our doctors, but are not the times ripe for the advent of a new specialist, the counselor of hygiene?

#### HYGIENE IN PROSTHETIC DENTISTRY.

*John A. Daly, Washington, D. C.*

The care of the mouth has made dentists pioneers in discovering the importance of public hygiene. In recent years, the rise and growth of the "bacterial theory of disease has clothed the profession with new duties and

larger responsibilities. Possibly the theory has been pushed too fast, if not too far, yet prevention is the greatest function of the healing art, and cleanliness yields nothing to moral purity as a canon of right living.

The structure and functions of the mouth offer difficulties to the maintenance of that hygienic status which sanitarians demand and the public craves, and in the department of oral sanitation, dentists must keep in step with the general march. If that happy-go-lucky creature, man, was capable of being either flattered or scolded into taking proper care of himself, the history of medicine and surgery would have to be newly written and a new generation of practitioners.

Dentistry, in common with other liberal professions, has its burning questions and its professional sores. In the fore front of these is the controversy over vulcanite dentures. This has raged, with brief intervals of fitful silence, for more than a quarter of a century. Dentists were told, twenty years ago, that as gentlemen, obedient to the voices of honor and duty, the only use they could make of vulcanite as a denture was to disuse it utterly and forever. Yet it still holds its place, not because dentists as a class lack conscience or sensibility, but because it has demonstrated its place in dentistry. This place is a large and important one that nothing else is ready to fill. There is a conviction that the evils charged to it are preventible and therefore to be cured.

The vulcanized dental plate, as commonly made, presents a contact surface roughened and uneven, conforming to the shape and irregularities of the palate to which it is to be fitted. If the rubber has been skilfully vulcanized, the plate, unhappily, is porous; if unskilfully, the porosity is increased. In practice, the vulcanization of the rubber usually falls so far below the laboratory standard of perfection as to occasion porosity in an objectional degree. Now, if we are to give but moderate credence to the exposition of the phenomena of the bacterial theory, it is evident that this cavernous or spongy structure, the vulcanite denture, is well adapted to the purpose of a microbic hive or nursery; when fitted in the mouth it is peculiarly provided with warmth, moisture and nourishment, for generation, growth and propagation of the bacteria. Hence, unless the bacterial theory is to be totally rejected, against the plainest evidence of ascertained facts, as distinct from its assumption, it is manifest that to furnish the main entrance to the human system with an incubating apparatus for microbes and germs is to add a new terror to life.

But apart from this, the porous structure of the vulcanite plate is saturated by the secretions of the mouth, heavily charged with organic matter, in a state of decomposition. Here we contemplate a condition at once disgusting and alarming. Regard for common notions of decency and for ordinary safe-guards to health require that the dental profession should not tolerate means leading to such odious and menacing consequences. It is but cowardly, or unscrupulous evasion, to say this foul and morbid state of things are avoidable by ordinary habits of cleanliness. It is not true. A nightly immersion of the plate in water, even if pure, is of little use. To expect that wearer to regularly take the plate to a dentist to be made wholesome, or to expect the owner to be provided with a chemical solution in which to steep the plate over night, would be to look for a radical change in human habits. We must resort to some simpler method for defense against bacteria, uncleanness, and disease. Fortunately, such a method is not undiscovered

The existing state of the art of dentistry enables us to retain the cheap, convenient, durable and serviceable vulcanite plate without submitting to the evils due to its porosity. By simply interposing an efficient lining of suitable metal between the plate and the hard palate of the wearer, all the objections disappear.

A lining of gold, silver and tin foil, of platinum and aluminum, of crystallized gold with interstices filled by rubber, and of gold in mechanical union with other metals, have been each used without success. The foil linings soon peel off, as do those of aluminum or platinum; the palatine surface of a denture lined with crystallized gold, fortified by vulcanized rubber, is dull and unsightly, besides which the contact of the interstitial vulcanite with the mucous membrane of the mouth is provocative of the disorder known to dentists as "rubber sore mouth," and the duo-metallic lining either separates from the plate or tarnishes to such an extent as to predicate disintegration or degeneracy of the pure metal.

An efficient and suitable lining for vulcanite dentures has been found in a thin, pliable plate of pure gold, kept smooth on the palatine surface during the process of incorporation with the vulcanite, and with the other surface so rough as to be capable of a fast mechanical union with the rubber plate.

Take a sheet of No. 60 all-gold foil, smooth on one side and rough or crystalline on the other, the rough side having prominent and well-defined crystals, and press and fit this closely and accurately into plaster molds. Then vulcanize the rubber denture on this interposed golden base. The union of metal and vulcanite is so thorough that it cannot be severed by mechanical means, and only by such heat or chemical disintegration as would destroy the denture. The lining cannot even intentionally be scaled or peeled from the plate. This bright, smooth lining of dense, lustrous, pure gold imparts a beauty of aspect to the plate which is an added and substantial element of value, sufficient in itself to win from the patient the moderate addition to the cost of the plate. The lingual surface of the plate attains a higher density, and is capable of a specially attractive polish from being vulcanized on so firm a base. The plate is a more accurate copy of the model than when the vulcanizing is on a bare surface of plaster. The fit of plate to the mouth is practically perfect. There can be no rubber sore mouth, or the cultivation of disease germs. The poisonous secretions of effete or decaying matter, deep-seated uncleanness, unsightliness, and malific odors, are reduced to a minimum. The lining can be applied as quickly as the plaster, and dirt can easily be cleaned from the rubber plate.

#### COMBINATION OF GOLD AND RUBBER IN BRIDGES.

*Dr. L. G. Noel, Nashville, Tennessee.*

Suppose you have a case where the bicuspsids and two anterior molars are lost, on one or both sides of the lower jaw. Make your gold shells to invest the teeth to be the abutments of the bridge, and take an impression, bringing them away. You next get a model in sand and plaster, and with this proceed to connect the two shells with a strong bar of platinum and iridium, which is to give longitudinal strength and afford attachment for the rubber. Now take a bite. This can be done with either wax or modeling composition placed about the bar and adapted to the gum while soft.

Building up enough between the shells we direct the patient to close the teeth on it and thus get the bite.



The completion of the work consists in adjusting suitable vulcanite teeth, and attaching them by the usual process. Sometimes it will not be necessary to take a bite. The teeth may be waxed to the bar and adjusted to the opposing teeth in the mouth.

As the rubber is to be cut away so as to make no bearing on the gum, no model of the gum will be required. It will readily be seen how much shorter this process is than making all gold dummy teeth, and soldering them together. It may not be a shorter process than soldering in porcelain teeth, but the work when completed will not offer as many crevices for the collection of fluids and food as the gold and porcelain, and we think the teeth will stand the strain of mastication much better than those attached by solder.

Many modifications will suggest themselves. For instance: Greatly increased strength may be obtained by soldering in two bars, and vulcanizing in swaged gold grinding faces, instead of porcelain teeth. These grinding faces may be well filled with solder, and for attachments, some platinum pins may be caught in this solder. These may be waxed on and readily bitten into adjustment.

A patient had lost all the upper molars and right second bicuspid.

I made a gold shell to invest the first bicuspid on the right side, and the second bicuspid on the left. As these teeth all had rather long crowns and small necks, I did not carry these shells to the gum, but only let the gold extend to the knuckle. This, I think, much better than cutting away the enamel to bring the tooth to straight lines, and covering the entire tooth. After getting my shells constructed, and accurately fitted, the grinding surfaces of the two bicuspid carrying the shells were ground away, so as to shorten the bite sufficiently to allow for the thickness of gold laid over them. The same grinding was done on the lower bicuspid, the bridges having been left uncemented. After getting an impression, and model with the shells in position, an oval-shaped bar of platinum and iridium was bent in the form of a horseshoe, and so adapted to the model as to rest on the gum just behind the lingual surfaces of the teeth, and extending as far back as the space between the first and second molars. This carried it some distance posterior to the shells, and this part of the bar was intended to give attachment to the vulcanite and artificial teeth.

Having soldered the bar to the shells, a bite was taken, and the whole thing transferred to an accurate model taken from a reliable plaster impression, and completed in the usual way, using pink rubber, however, because of the possibility of its showing in the act of laughing.

This bar idea to connect and give support to teeth on opposite sides of the mouth, may be used in various forms, and is subject to many modifications. I used it successfully to connect two artificial superior lateral incisors. In this case, collars were made for cementing to the canines, and these collars connected by a bar that passes across on the lingual, or posterior surface of the centrals. The artificial laterals were soldered to this, and the fixture proved a great success. The usefulness of this bar idea in cases of regulating, becomes at once apparent.

Dr. Geo. J. Friedrichs, New Orleans, read the following paper:

#### DENTAL GRIES AND POPULAR FALLACIES.

The little attention paid to teeth and their diseases, in a medical curriculum, leads me to believe that a paper on this subject will prove of interest.

Caries, the principal disease of the teeth, has existed in all historic ages. No race seems to have been exempt; all have variably suffered from its ravages.

Caries is produced by a chemical disintegration of the elements of the teeth. It begins on their surface, usually in some pit, fissure, or other irregularity, at the point of contact of the proximal surface, and about the necks of the teeth. When once begun, the destructive process spreads toward the interior; and as dentine is more readily effected than the enamel, a cavity is formed whose interior is larger than its orifice. If this process is not arrested, the whole crown of the tooth is ultimately destroyed.

When the molecular motion theory of Baron Von Liebig on fermentation was superseded by the brilliant experiments of Pasteur, a new light dawned on the problem of dental caries; for Pasteur conclusively demonstrated that neither fermentations nor putrefactions could progress without the presence of organic germs. Drs. Underwood and Miles, in a paper read before the International Medical Congress, London, in 1881, entitled "Effects of Organisms on the Teeth," summed up the following conclusion as the result of their experiments: "We consider that caries is absolutely dependent on the presence and proliferation of organisms. That these organisms attack first the organic material, and feeding on it create an acid, which removes the lime salt; that all the differences between caries and simple decalcification by acids is caused by the presence and operation of germs. That suppuration of the pulp, and its sequelae, such as alveolar abscess, depends also on the baneful working of organisms. We feel justified in concluding that the successful exclusion of germs would prevent the disease."

Other investigators have confirmed these views, yet notwithstanding this plausible theory, which accounts for the general cause of caries, there remains a "missing link," the germ theory does not solve, and that is what is called "dental erosion," a disease where the wasting of tooth substance takes place without an apparent cause; it sometimes attacks only one tooth in the arch, whilst the rest of the teeth remain intact and unaffected. It attacks both the enamel and dentine. Its favorite field for action is the labial and grinding surfaces of the teeth, and generally leaves the eroded surface smooth and polished. When it attacks children's teeth it is generally confined to the incisors of the upper maxilla.

By most authors this disease is denominated green tartar. At first, it is a mere stain and of a greenish color, hence the name; when the enamel becomes disintegrated the lesion follows the ordinary course of caries. In adults, when it attacks the bicusps and molars of the lower maxilla, the eroded surface is usually painful to the touch and extremely sensitive to thermal changes.

Antagonism is an essential factor of human existence. Motion and life can not go on without it. While the most active force of the building up process is going on, the opposing force or breaking down is equally efficient. Therefore it is only when these forces diminish in activity that there is an arrest in dental caries.

The predisposition to caries diminishes as age advances. One of the reasons for this is that by the time a person has reached the age of 18, all points favorable to decay have been attacked, and as we advance in years the teeth themselves become more dense and are better fortified to resist the inroads of decay.

The remedies employed to stay the progress of dental caries are mostly mechanical. Where caries is superficial, it is sometimes only necessary to polish the surface so as to leave a self-cleansing space. By the application of nitrate of silver a covering film is deposited which arrests its further progress, provided there is no depth to the cavity, so that no extraneous substance can remain to dissolve the film by the process of fermentation.

In the disease called green tartar, if applied in its incipiency, nitrate of silver acts as a specific. I have used it for this purpose in my practice for twenty years. In 1879 I read a paper before the American Dental Association on "Erosion of the Teeth," in which I made the following statement: "Erosion of the enamel can be cured. The agent to accomplish it is nitrate of silver, for when applied to an eroded part of a tooth it puts forth its fiat and says, 'So far shalt thou go and no farther.' The salt, when brought in contact with the organic matter of the teeth, is decomposed; the oxid of silver is deposited, an insoluble and inert substance, which protects and relieves these portions of the teeth of their hypersensitiveness, antagonizes the action of the morbid influences, and assists nature to arrest the disease."

My paper was received with indifference and doubt, yet singular to say, when twelve years afterward this same truth is rediscovered by a Dr. Stebbins, and brought before the same Association, the truth of the statement is acknowledged, with a proviso: that it was "nothing new under the sun," for every mother's son of them had made use of this agent for the same purpose for the last forty years.

To arrest caries, the decay must be thoroughly removed and the cavity filled with an inert and indestructable material. It must be packed solid, so as to render it impermeable, and secured in such a manner in the cavity that force will not dislodge it. The material must be left flush with the orifice of the cavity, and finished so that it can be kept clean.

This process of filling is the most important in the salvation of carious teeth. An incompetent who palms himself off as an operator is worse than a thief. A thief steals only my purse, while an incompetent dentist takes my money and destroys my teeth.

It is often amusing to listen to the views expressed as the causes of dental decay; some will put the blame on creasote. Says one: "I never had decayed teeth till creasote was applied to relieve pain." Others accuse sugar for the bad condition, especially of children's teeth. The preparation of iron, medicinally administered, is another scapegoat; also the preparations of mercury; ice-water, hot drinks, and climate. A foreigner will say: "I never heard of such a thing as decayed teeth in the old country." Some tell us soft foods are the cause.

Dr. Julius Pohlman says we do not use them enough. The negroes who chew sugar cane; the few old people left among us who persist in eating bread crusts, and the German peasants who are famous for their brilliant schwartzbrot zahne, or rye-meal-bread teeth (unfortunately no Scotchman ever crossed his path, or else oatmeal must of necessity come in for a share of his praise) and he further says that their teeth are polished, but not worn out by daily mastication of dry, hard, black loaves.

Our weak and effeminate teeth are not used to hard work, and, like other organs that are not exercised, tend to undergo atrophy. The foundation for bad teeth is generally laid in early childhood, for numberless mothers and nurses very carefully soften the food or remove the crust from the bread

before giving it to the little folks, because it might otherwise "hurt their teeth." And so the children grow up with a set of unused teeth, then we wonder why the poor child has such bad teeth, and why it is so often suffering with toothache, and why the dentist's bill is so high.

All of these have their influences, but altogether are not sufficient to account for the prevalence of caries. It is a noted fact that the Esquimaux living on whale blubber, the tropical oriental with rice diet, and the savage with his forest nuts, grain, and dried meats, all have good teeth. Lack of lime in our food—bread as now prepared is principally composed of starch. According to Dr. Playfaire, "Average dietaries" for adults in health, is about twenty grams of mineral daily introduced with the food. This proves that the tissues may be saturated with lime salts, and if they be not appropriated there presence is of no value.

The act of nutrition is the appropriation from without of the materials entering into the composition of the living frame. The difference between the protoplasmic elements that originate a tooth and those which originate bone, we may never be able to distinguish; yet we know there is a force that directs to formation, as certain as intercepted light will cast a shadow. Over this process or affinity we have no control; germ-potency determines not only the time for the appearance of an organ, but also directs its form and function.

Given a well organized denture, an unimpaired nervous system, in a sound body without inherited taint, teeth would never decay so long as this condition is maintained, and that, too, irrespective of climate, peculiar kinds of food, or any external agents which might be present in the natural course of nutrition.

Even cleanliness, now considered so essential, would be unnecessary as a preservative of the teeth, and it would be practiced only for its comfort, for in a normal condition of the mouth and its fluids there is a process of self-cleansing.

Dr T. B. Welch said: The title of that paper might well have been, "What We Don't Know About Caries." It is singular that we know so little about what is really our specialty. A gentleman sixty-five years of age—a judge, too—once asked me to sell him one of my separating files. I asked him what use he expected to make of it. He said it was to keep his teeth from decaying; that for many years it had been his habit, whenever he detected any roughness or incipient decay, to file off the surface quite smooth, and that was the end of it! I thought then how little I knew about my own business. We all have theories, and in looking for the proofs, if we find facts that do not agree with our theory, we conclude they are exceptions to the rule. The longer we live the less we find we really know. Because the Indians and the negroes have better teeth than we have, we conclude that it is because of our soups and soft food and pampered diet that we have poor teeth. Among the poorest classes of people, who may be supposed to violate all the rules of hygiene, we find quite as

good teeth, if not better, as among those who observe all the known rules of health. And so we do well to ventilate the question of "What We Don't Know."

Dr. Cowardin: The gentleman who read the paper referred to my hobby—the action of sweets on the teeth, not directly, but through the acids they form. It seems natural for children to im-bibe sweets. Some children eat pounds of sugar and candy in a day. A child was brought to me about two years ago—a child thirteen or fourteen years of age—the complexion pale, the flesh flabby, doughy; every tooth showed the action of acids on the surface. I said to the mother: "This child is not having a healthy normal diet—beefsteak," etc. The mother replied: "It is true; I cannot get her to eat anything substantial; nothing but candy and cake." She said I had described her diet as though I had lived in the house with her. I asked the child if she wanted to have her teeth preserved. She replied she did, and that she was willing to do anything that was necessary. I told her to stop, from that very day, and not eat any more sweets, except as an occasional relish. I put in ten fillings for her at that time, and she has required but one more since. That is one case, but I could relate many more. So many children come to me with bad teeth, and the same habit, that I have concluded one great source of caries is the lack of hygienic diet.

Dr. R. R. Freeman: If there is one thing that touches me more than another, it is this attempt to deprive children of their legitimate sweets. I think my teeth are pretty fair specimens of teeth for a man of my age, and I have enjoyed sweets all my life. Dr. Crawford gets after me because I give children candy, but I think it is a mistake to refuse to enjoy good, wholesome sweets—pure syrup and sugar; not the chemically prepared adulterations of the market, but if you can't get genuine New Orleans molasses, take sorghum. The appetite for sweets is a healthy, natural appetite, and nature furnishes sweets for our benefit. I don't want any miserable looking children about me. If you see a child pouting about some little trouble, touch him up with candy and you straighten him out at once. A child can't look cross while it is eating candy. It is not the sweets that hurt the child, but the lack of other foods. I never did believe in depriving children of what they naturally enjoy. Don't force your children to eat brown bread; give them sweets, fruits, and vegetables; give them what they like, and keep them good-natured and happy, and let them run and play, and exercise and develop their muscles. They can get more muscle out of sugar than out of anything else. The negroes are a sugar-loving, sugar-eating race, and look at their

teeth. It is the unnatural modes of living, high living, fine dressing, strained propriety of movements, that ruin the general development of children and give them an enemy look. There is nothing better for children than good, pure sugar, straight from the cane juice.

Dr. Friedrichs: People blame sugar for poor teeth, but I do not endorse that. That is one of the popular fallacies. Sugar is a necessity.

Dr. Cowardin: The gentlemen have hit me hard, but I am not ready to retract. A mixed diet is all right, but nature never made any candy. Children who eat much candy eat it to the exclusion of normal tissue-building food.

Dr. J. Y. Crawford: I hope this subject will not be passed over lightly, as it is one of great importance, though the style of the paper and of the reader was rather one of light entertainment, so that I do not fully get at the teaching intended or understand where to locate him. We cannot judge from a single isolated case. Dental science has not yet got where the question of the etiology of this disease called caries can be considered settled. We must perfect our knowledge of the etiology of the disease before we can hope to successfully treat it. I believe it is within the power of man to solve the question of this phenomenon known as dental caries. I believe that man has the endowments necessary to accomplish that feat, but there are many factors involved in it. Men have sought to taboo climate as one of them, and it is an important factor. The progeny of foreign parents who had good teeth in their own climate, have poor teeth in other countries; the influence of climate on the teeth is shown to place caries in the class of zymotic diseases. Some taboo the idea that it is caused by lack of functional activity, but I undertake to say that that is not a prominent etiological factor. In prehistoric skulls we find evidence of dental caries in individuals. I am an evolutionist and an involutionist, and in this I do no violence to the Christian belief. A proper understanding of the doctrine of evolution will show that any clashing between science and revelation is impossible. Neither is the doctrine of hereditary influence a truthful one. It is a popular fallacy that heredity is a prominent factor in the production of irregularities, but I believe that as an etiological factor it is at the very tail end of the list. Neither is there any more foundation for the dogmatic statement that man will eventually become an edentulous race. Man is composed of three natures—moral, intellectual and physical, and these three natures must develop in equal ratio to make the perfect man. Let his physical development outstrip his mental powers and he will relapse into barbarism. Cultivate the mental

only, at the expense of the physical or the moral nature, and the results are just as terrible. He must develop equally—mentally, morally and physically, or he is incapable of managing himself, his State, or his church.

As to the argument of Dr. Freeman and his reference to me, I submit that the character of the condiments consumed by children, as they are found in the little corner candy shops and in alley-ways, have done more harm to the American people than many habits that are strictly tabooed. One important factor that has not been referred to, and the disregard of which is to be laid at the door both of parents and of the profession, is the system of education in our cities. This is the worst of all that we have to contend with in the destruction of teeth. The members of the dental profession should be entitled to say when children are fit to enter school. As we are the ones entitled when the child is ready to leave the breast and change the character of food, so we should say when they are prepared to begin mental labor. Odontological science alone can decide that point. American children of from four to nine years of age cannot prepare food for the stomach that will fit their bodies to sustain the brain in educational work. They should not be made to undergo the severe ordeal of our city schools at that age. Enough money is spent at the wrong end of the line to carry out a complete system of higher education. If I am unorthodox I have at least the convictions of an honest man.

#### ORAL HYGIENE.

*Dr. T. C. West, Natchez, Miss.*

#### REPORT OF COMMITTEE ON LITERARY AND VOLUNTARY ESSAYS.

*Dr. Henry B. Noble, Washington, D. C.*

A very complete list of new books and works of interest to dentists is to be found in the report of Dr. A. W. Harlan and published in the *Dental Review* for June, 1894.

Catching's Compendium of Dentistry improves each year, and is richer than usual in good, well selected information, intelligently condensed and of interest to every dentist.

The National and United Dispensatories.

Richardson's Mechanical Dentistry.

Evans' Crown and Bridge-work.

Guilford's Orthodontia.

Miller's Micro-organisms of the Human Mouth.

"An Introduction to the Study of Bacterio-Pathology of the Dental Pulp," by Dr. W. D. Miller, of Berlin, published in the *Dental Cosmos* for July, 1894.

The Transactions of the World's Columbian Dental Congress.

These are among the most important of the publications of the past year, which should be found in every dental office; of course, not omitting

the writings on the new "fad" Hypnotism, which we all variably practice, though unconsciously by most of us.

If the standing of dentistry is to be judged by its literature, the past year is one of marked improvement; especially is this the case in the editorial department of our Dental Journals, proving the old adage "practice makes perfect." Long, windy articles are going out of date; what is wanted is short articles on specific points, to the illustration of some new method of manipulation, or of the action of some medicine. It should be the aim of every writer not to use unnecessary words. The ponderous editorial of the daily press of a quarter of a century ago finds no place in modern journalism, and our writers should be guided by the examples of the daily press.

Societies are often bored and wearied by long papers, that by their length scatter both thoughts and audience, rendering their discussion impossible. Local societies should encourage and try to induce young men to present papers, and thus put them in training for service in our State and National societies.

Some of our journals have published papers of young men who have nothing of interest to say, but seem anxious to see their names in print, or as an advertisement for home consumption; these articles, by obscure or young men of no standing or connection with local societies, should be carefully scanned by editors before publishing them. Local societies are the place for amateurs and vealy papers.

As Dr. Harlan so aptly says in the report to which I have referred: "If you make a discovery, print it; if you have an unusual case, report it; if you do some original work, tell how you did it; but do not read a little bit about a subject, and then rush into print and show your ears so every one can see them."

The treatment and filling of pulpless teeth has been one of the leading subjects of discussion in our societies and in our journals, but no universal course of treatment or filling has as yet obtained.

The papers of Prof. C. N. Peirce, of Philadelphia, and G. V. Black, of Jacksonville, Ill., "On the Pathology of the Disease of the Peridental Membrane, Generally Known as Pyorrhea Alveolaris, and its Connection with a Gouty Diathesis and 'Uric Acid,'" are among the most important and scientific papers of the year, and should receive careful consideration and study, more especially as the disease seems to be on the increase and demands our earnest attention and study if we would successfully combat its insidious progress. The interchange of papers between societies of different localities has been spoken of as a means of presenting subjects for discussion, and of encouraging a friendly fraternal spirit that would serve to interest and infuse new blood into some of our stagnant badly attended societies. A paper read before a local society that provoked discussion or deemed worthy of more general circulation could instruct its secretary to send it to another society, thus acting as a standing premium for good work.

Our minds, like our instruments, need sharpening, and like our teeth are improved by good vigorous use; an active educated brain will the better guide our hands in those delicate operations we are daily called on to perform.

I fear our journals are not as generally taken or read as they should be. I would recommend that our local societies subscribe for the various journals,



and make themselves into a sort of circulating library for the benefit of those who cannot, or will not, subscribe for them, but could thus be induced to read them.

#### EDUCATION AND LEGISLATION.

*Dr. Henry B. Noble, Washington, D. C.*

There are laws in some of our States that seem to be a slur on college and university work.

Our universities and colleges should be fostered and encouraged. If thought necessary, their work should be examined by committees from our National Societies and Examining Boards, so that a diploma shall represent such a course of training and knowledge of dentistry as shall entitle the holder to practice, without further examination, in any portion of our country he may select, subject always to the laws of malpractice.

Some of our dental laws have been enacted under the false impression that lawyers and those of other professions are subjected to examination on change of location. This is not true.

When a lawyer is admitted to the bar he is by that admission freed from further examination. His credentials give him standing, and admit him to practice in the courts of all the States. The Supreme Court requires that the applicant shall have been a member of the bar for three years before he can be admitted, but is never examined. Several of the States have similar provisions, but it practically amounts to nothing, as a motion to allow a lawyer to appear in any particular case is always in order, and nearly or never refused. For misconduct or dishonesty he can be debarred from practice, and if dental laws can be made to reach and debar from practice those who prove unworthy or incompetent it should be done.

The dental law of Connecticut, which went into effect within the past year, covers this ground better than those of other States. It prescribes that under given conditions the Examining Board can cancel the certificate or right to practice.

The usefulness of our Examining Boards would be enhanced if they would turn their attention to getting laws that will reach the advertising quack, rather than watching or turning down some boy graduate who is not quite up to book examinations, or catching some old graduate who may be getting a little rusty in anatomy or chemistry, who may, by change of location, be subjected to an examination; only a few States make necessary examination every time a change of location is made, and we hope these will soon be changed to a more just, liberal, and wise provision.

It has been claimed that the examination of graduates by Examining Boards tends to the raising of the standard of graduation in our colleges. If this is the object, let the examination be before not after he has received his diploma, and have it represent both the Examining Board and college.

Are our Examining Boards as constituted, more competent or better qualified to examine students than the teachers in our colleges? I think the answer must be clear to any unprejudiced mind that the college professor, who by daily lecture and association, is decidedly the best qualified to judge of the competence of a student.

If it is believed that our colleges are not educating their students up to a proper standard, let committees be appointed to investigate and report that we may know what colleges are derelict. Let us not strike a blow at all our

colleges by not recognizing their diplomas, and the great work they are doing ; for it is to the dental colleges we must look for the education of those entering our profession, and a diploma should mean something to its holder. Let us take hold of this subject in earnest and weed out the incompetent, and recognize and honor the diploma of our reputable dental schools and universities.

An attempt was made to keep all teachers in our dental schools from being on our Dental Examining Boards : but of all men they are the best qualified to be dental examiners. In every State where there is a college they ought to have representation on the Examining Board to serve as a friendly connecting link. There should be only harmony and mutual interest between these two arms of the profession. How better can this be accomplished than by bringing them into working association with each other ?

We would suggest that a committee be appointed from each of the National Associations to act and consult with a similar committee from "The National Board of Faculties" and "The National Board of Dental Examiners," to examine our dental laws and to recommend such changes as will harmonize them and promote dental education.

#### CHLOROFORM.

Dr. A. C. Hewitt, Chicago, demonstrated his method of administering chloroform, for the alleviation of pain, without producing full anesthesia. He said he had studied the action of chloroform for more than twenty years, and found that long before full anesthesia was reached, pain was greatly lessened by inhaling chloroform. This was an accidental discovery in his own experience; suffering from severe toothache while in church, and having a small vial of chloroform in his pocket, he removed the stopper and smelled it as he might cologne; to his surprise he found the pain gradually subsided. The next day he had planned to go to Detroit to have the tooth extracted, but concluded to lance the gum himself. Smelling the chloroform in the same way, he perceived no pain from the operation, though he buried the lancet in the tissues to the back, and cut the gums entirely free from the tooth. Smelling the chloroform bottle again he applied the forceps, and grasping it with both hands he extracted his own tooth without feeling any pain. From that time to this he has continued to give chloroform to his patients in that manner for the extraction of teeth, though he never extracts a tooth if it is possible to avoid it. Placing the fingers on one nostril he instructs the patient to take one long inhalation, removing the vial to prevent the exhaled breath entering it. As Dr. Hewitt continued his lecture, he inhaled the chloroform from a small vial occasionally, describing the gradual extension of the sensation as it reached the back of his hand and then his fingers, his lower limbs, the instep, the third toe, etc., till he reached the obtunded condition in which he said he would not hesitate to look on and have a finger amputated if it

were necessary. He declared that neither his consciousness nor his senses were affected in the least, but the power of sensation to pain seemed to be completely hardened. After months and years of operating with this assistance, without inflicting any pain, he felt it his duty to place it before the profession as a valuable and perfectly safe obtundent. He has employed the method for more than thirty years, and has never had anything approaching an accident. Of late he applies cocain to the gums, but supplements it with this one of chloroform.

Dr. R. R. Freeman: How do you know when you reach the right point?

Dr. Hewitt: I have studied that point very carefully, and I watch for the appearance of a muscular effort to close the nostrils as the breath is drawn in; there is also a lazy droop in the eyelids, and a letting down easy in the chair—a sort of a don't care expression on the face. It is absolutely safe, and I know it. I have tried to kill small animals by giving it in that way, and I can't do it. The shock of extracting a tooth without it may kill a patient, but not chloroform given in this way. The idea is to give a very large proportion of air, perhaps a thousand of air, to one of the chloroform vapor.

The Chair: I wish to thank Dr. Hewitt for this idea, which is entirely new to me. But I am afraid of chloroform, and I would not like to give the endorsement of this Association to the idea that chloroform is absolutely safe administered in any way. Though, as he says, he has had no accidents, yet he is treading on the brink of serious danger, I do not say this to criticize but as a proper measure of caution.

Dr. C. Sill: In my early practice, chloroform was given every day, but on a sponge; and I think that really the safer way, as we get a much smaller proportion of chloroform vapor.

Dr. H. B. Noble: I was familiar, as a student of Dr. Maynard, with the early experiments with ether and chloroform, and I agree with our President, and I would not like our young men to be impressed with the idea that there is ever absolute safety in the inhalation of chloroform. I say emphatically, that in my opinion, there is danger. I will give only one instance: A lady came to my office, suffering severely, and wanted to take chloroform to have the tooth extracted. It was before the days of nitrous-oxid, or I should have sent her to a specialist. She declined to take ether, which I would have preferred, as it affected her unpleasantly. She sat down in my chair, but with the first breath of chloroform she fell back, like lead, in the chair. I did not have a chair then to flat-out; I was not in the habit of using chloroform, and did

not have the necessary restoratives at hand. I had an electric battery on the shelf, but, of course, it was not in order. Ammonia had no effect on her. I sent my boy for a physician, and took her out of the chair, laid her down, opened her clothing, and dashed cold water on her chest. As the water struck her, she gasped; but I venture to say she would never have drawn another breath if I had waited for the physician to come. But it gave me such a scare that I have never used chloroform since. Dr. Hewitt says he cannot kill small animals with it in his way. Well, I have thought I had killed rats and mice with chloroform that had been taken in a trap. I never saw them come to life again.

Dr. T. B. Welch: There are different ways of giving chloroform. Dr. Hewitt claims that safety lies in the large proportion of atmospheric air. I believe much of its danger is by not heeding this fact. But in every way there is danger. All have not the caution of Dr. Hewitt.

Dr. Noble: There is a physician in Washington, who, twice in my chair, has done just as Dr. Hewitt describes. He brings his own little vial of chloroform. He has his hand raised, and tells me when he drops his hand I am to extract his tooth. With him it has produced no ill effect. Dr. Geo. A. Mills, of Brooklyn, proposed the same thing to our Dental Association, but it was generally considered dangerous, and has not been adopted.

Dr. H. J. McKellops: I have had much experience in giving chloroform from a napkin to men and women, negroes and children, and I have never had any trouble. I have taken it in Dr. Hewitt's way too, and it exhilarates me. I got drunk on it. But we don't know when the fatality will occur. We hear of accidents all over the world, at the hands of the most scientific surgeons, so we should be as careful as possible.

Dr. R. R. Freeman: If all will call to mind the looks of Dr. Hewitt as he stood on the platform, you will recognize that he is a kind man, that he is kind to his patients, and in that kindness lies the magnetic, subtle force that does the work. The action of the chloroform in his hands exerts an influence of a dual nature. He has the power of disabusing the mind of its ordinary fears and lift him out of himself. But chloroform is one of the most dangerous drugs in existence, and it is especially dangerous in the hands of an inexperienced man. Dr. Hewitt seeks the comfort of his patients, but many would make extracting easy because of the dollars to be made. We should run no risks simply to relieve from toothache. Compared with chloroform, I believe that ether is comparatively harmless. By faith you can remove mountains, but I supplement faith with ether. Dr. Freeman related an incident of extraction.

with the aid of ether. A noted hypnotizer having failed to gain any influence over the patient, a so called "blue-gum nigger," Dr. Freeman concluded to try his style of hypnotizing. He said to the darkey, "Look here; let's get that tooth out. I use ether, and if you do as I tell you it will be a small affair, but if you budge, or say it hurts, I'll break your neck!" He felt that he had received the full sympathy of the darkey, and that he was determined to do as he was told. The ether stimulated him and in two minutes, with two ounces of ether, he had the tooth out, and the darkey said it didn't hurt a bit; but, added Dr. Freeman, I believe that darkey lied.

At 8.30 P. M. the Committee on Clinics, Dr. J. Y. Crawford, Chairman; Dr. T. P. Hinman, Secretary, with Dr. C. Sill, Chairman Committee on Appliances and Improvements, offered their final and complete report as follows:

Dr. H. E. Beach, Clarksville, Tenn.: Surgical Clinics.

CASE 1.—Removed first lower molar for necrosis of alveolus and persistent abscess, using new forceps of Dr. Storer How. Operation successful.

CASE 2.—Removed left upper wisdom tooth, the second molar being crowded out of position its full diameter, the expectation being that the latter will gravitate into position; the wisdom tooth badly decayed on the anterior proximate surface, otherwise the second molar would have been extracted.

CASE 3.—Removal of right upper bicuspid root, broken off under the gum, with use of local anesthetic as follows:

R. Cocain	grs. viij.
Antipyrin	grs. xij.
Aqua dist.	3 iij.

M. Sig.—Inject two to five minims in gum for removal of tooth. Operation painless.

CASE 4.—Patient, boy, aged thirteen, edentulous space between left upper central right lateral; left lateral absent; right temporary central removed about six months previous, as stated by patient. Indications of eruption of tooth or teeth in edentulous space. In the opinion of Dr. Beach, the missing central and a supernumerary apparently within the alveolus. Dr. Beach made an exploratory puncture, finding what he believes to be the enamel surface of the teeth.

Dr. V. H. Jackson, New York, examined the patient, and believes the missing central about to erupt; did not make examination by exploration. He advised waiting developments. (See *Cosmos*, December, 1891.)

Dr. V. H. Jackson, New York, showed his wire "crib" appliances for regulating teeth, using German-silver wire, g. 14, and soft solder. Crib spring attachment 20 to 21 g.

The exhibit and clinic was interesting throughout, as evinced by the constant presence around Dr. Jackson's chair of as many as could see at one time. Your committee would respectfully suggest the careful observance of all Dr. Jackson's remarks in regard to his system, particularly the size and character of the wire used, the force being obtained from spring in the wire.

Dr. S. B. Cook, Chattanooga, Tenn.: Regulating appliance for the expansion of the lower jaw. The appliance made of bands and bars put together with vulcanite in which is placed a jack-screw. The committee take pleasure in commending the efficiency of this unique fixture.

CASE. 2.—Models of patient, aged thirteen, male. The superior central incisors were very much elongated and protruding, as the result of the injudicious application of elastic rubber bands designed to bring together the two central incisors, preparatory to driving them back in position; one of the bands worked up under the gum and remained there for some two years, preventing the success of the undertaking. Dr. Cook replaced them in normal position.

CASE 3.—Loss of the superior lateral incisors, resulting in the spreading of the centrals, necessitating bringing them back into position to make space for the insertion of laterals. This was accomplished by banding the two central incisors with gold bands, soldered to the palatal aspect of the same, with metal bars projecting back from the palatal surface, over which was vulcanized a sufficient quantity of rubber to hold a jack-screw, having the reverse action of spreading the arch and bringing the two centrals together. The laterals were represented by skeleton, or open band crowns, extending across and back of the lateral space. The second model exhibited perfect closure of the space between the centrals, with laterals of normal size in proper position.

Dr. B. H. Catching, Atlanta, Ga., illustrated the use of a white linen roller-shade, in graduating and controlling the light, by means of a pulley attached to the ceiling above and back of the operating chair, the efficiency of the same depending on reflection of the light.

Dr. Hollingsworth, Kansas City, Mo., began a piece of bridge-work for the lower jaw, extending from the second bicuspid to the wisdom tooth, using his original method of bridge-work.

Dr. Jno. S. Marshall, Chicago, Ill., commenced a surgical clinic in the treatment of an obstinate abscess, by the removal of

the tooth, which is to be replaced. Impression taken for a gold splint to retain the replanted tooth in position. (This operation was abandoned, as there was not sufficient gas pressure to make the gold splint.)

Dr. W. H. Morgan, Nashville, Tenn., gave a clinical lecture, by the examination of a patient, giving special attention to the importance of proper physical diagnosis in detail, describing the treatment, and suggested probable prognosis. In the treatment of the dead teeth, in the case in hand, he insisted on the necessity of antecedent treatment, in order that the contents of the root canals and tubuli become mummified before filling. Dr. Morgan is a strong advocate of carbolic acid in such cases.

Dr. W. G. Browne, Atlanta, Ga., filled a large buccal cavity in the right superior first molar, using sandarac varnish to hold in position a large pellet of gold, into which he worked strips of gold, relying on the varnish only for a start, but not as substitute for anchorage. Dr. Browne used his new mechanical mallet, exhibiting great skill and familiarity with the principles involved in the introduction and consolidation of cohesive gold.

Dr. R. R. Freeman, Nashville, Tenn., filled superior second bicuspid and first molar with tin and gold, using tin at the cervical wall, lining the buccal wall with gold, in order to prevent discoloration from the tin. He used a matrix made of the end of a "00" file. He finished the fillings with thoroughly annealed, extra-cohesive gold cylinders, making a complete restoration of contour. The operations were eminently satisfactory and instructive.

CASE 2.—Filling roots of superior left first molar, using yellow wax and lead points; a case of immediate root-filling, cleaning with alcohol (creasote preferable). He used Evans' root-drier to melt the wax in the roots, forcing the lead points home into the molten wax.

Dr. George Evans, New York, presented a method of crowning front teeth. He reams the root canals to a regular size, inserting a crown pin-post, perforating a small plate of platina with a countersunk spot to fit aperture of canal. The post has a screw thread, and is screwed through the countersunk hole and fastened in place by melting pure gold placed in the countersunk hole when the cap is made. The proximal and palatal sides of the root are then banded, using an original method of bringing the edges of the platinum plate over them. The porcelain tooth is backed with two sections of platina in such a manner that when the crown is soldered, the solder flows underneath the porcelain and over the cap and collar section, giving perfect continuity of all sections of the crown. The advantages of this method are, that no collar of

metal is present at the cervical or labial margin ; all the strength of the regular crown is obtained, and simplicity of construction is promoted. Dr. Evans also showed a method of forming bridge-work with hollow, all-gold dummies, instead of filling them solid with metal or other material.

Dr. John S. Thompson, Atlanta, Ga., exhibited metallic models of block tin, made directly from plaster impressions, making celluloid plates thereon. Also, application of tin and aluminum foils to the wax used to mount cases, the surface next the foils coming out finished, and harder than when the foil is not used.

Dr John A. Daly, Washington, D. C. : Lining rubber plates with chemically pure gold, crystalline on one side and smooth on the other. He first varnishes the invested model with sandarac varnish, and then with damar varnish to make the gold adhere to the plaster model, the gold being adjusted in small pieces and the rubber packed over it. By this method it is impossible to separate the gold lining from the plate except by fire, files or scrapers. The lining will last the life of an ordinary rubber plate. He claims greater density for rubber vulcanized on a metal surface of that character, and, possibly, absolute cleanliness of the plate. The method of making this lining is as follows :

On a sheet of No. 20 soft foil is deposited crystals of gold, varying in thickness from No. 30 to No. 40, making the entire thickness of the completed lining about No. 50 to No. 60.

Dr. B. B. Smith, Gainesville, Fla. : Contouring left superior central incisor with cohesive gold and making a simple filling in the right central, using cohesive cylinders and ropes with the automatic mallet. The nerve in the left central he capped, using Dr. Genese's nervine vita.

Dr. C. Alexander, Charlotte, Va., exhibited his universal sandpaper, corundum-stone and rubber-cup mandrel. The special features are that the disk is removed and replaced while the engine is in motion and without reversing it, with no risk of tension or breaking spring or cable. The mandrel presents many good points, being an economical and time-saving apparatus, filling a long-felt want in this line.

Dr. J. H. Crossland, Montgomery, Ala. : A piece of bridge-work, using the hood-crown on a canine for one of the abutments, and the second superior bicuspid for the other, supplying the first bicuspid. He used Dr. W. G. Browne's investment compound in soldering. (This piece was not completed, owing to insufficient gas pressure for soldering.)

Dr. Wm. Crenshaw, Atlanta, Ga. : Exhibition and demonstration of an abscess drill, original with Dr. Crenshaw, with which a



blind abscess may be opened into, through the gum tissue and the alveolus, to the point of the root affected. The device is so constructed and arranged that, after getting the length of the tooth from cutting edge to apex of root, it may be so set that a suitably shaped drill may be directed unerringly to the end of the root, thus establishing drainage or an open canal, through which medicaments may be passed through the tooth into the abscess, and thence out to the surface of the gum.

Dr. C. Sill, New York: Dr. Sill's traction engine is intended to draw into shape a subcervical band, where a superstructure of any kind—telescoping, cap, or band—is required on over-jutting crowns, without any mutilation of the tooth, saving, thereby, all the usual time and pain in cutting and shaping the tooth-crown, as necessary by any other mode.

Dr. W. V. B. Ames, Chicago, demonstrated the manipulation of oxiphosphate of copper, calling attention to the fact that the maximum of density can be obtained after the material has been used in a semi-fluid state; that in that state the cement best exerts its germicidal influence, and that absolute dryness is not essential.

Dr. W. G. Browne, Atlanta, Ga., exhibited his parchment and sandpaper disks, which cut as perfectly under water as when dry, which he demonstrated. As the disk is used, the grit becomes filled with metal, and the same disk used to cut down a filling will also polish it. Dr. Browne also exhibited his new engine mallet; also a disk carrier.

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#### PYORRHEA ALVEOLARIS, ALCOHOLIC STIMULANTS, AND THE URIC ACID DIATHESIS.

In the *International Dental Journal*, September, 1894, page 591, the following statement occurs: "In none of the analyses heretofore made has uric acid ever been recognized, nor was the presence of uric acid in these deposits ever suspected till Dr. Peirce made his report."

In view of the above statement the following references may prove of interest:

In a discussion of pyorrhea alveolaris in the meeting of the Southern Dental Association, 1885, the late Dr. W. C. Reese, of Galveston, Texas, said that in his opinion, the prolonged use of alcoholic stimulants was a cause of this disease, "the use of alcohol increasing the uric acid in the system," and that analysis "proved the deposits to be uric acid." He said "Remedies which decrease uric acid in the system \* \* \* are the remedies for pyorrhea."

The idea advanced by Dr. Reese was not discussed, except that Dr. W. H. Morgan said: "In accordance with the medical axiom 'Remove the cause and the disease will cease;' but I had never heard that the calculi of pyorrhea were uric acid. I have not had it analyzed myself."

In 1886, at the first annual meeting of the Louisiana State Dental Society, Dr. Reese read an essay entitled "Uremia and its Effects on the Teeth," from which I quote a few lines: "The action of uric acid on the teeth may be called a phagedena pericementi, as there is usually an eating away or absorbing of the peridental membrane. The observation of the writer is that while the formation of tophus on the roots of teeth is the usual concomitant of uric acid troubles it is not necessarily so. The absorption of the peridental membrane may take place without any deposit whatever. I do not wish to be understood as saying that there is not a salivary calculus composed principally of phosphate of lime. You will sometimes see both this deposit and the tophus caused by uric acid on the same tooth, the phosphate being of lighter color and more porous."

Of the treatment of pyorrhea alveolaris he said: "Uric acid has a strong affinity for chlorid of sodium, and we can sometimes dissolve the deposit with this substance, but it is painful to the gums; \* \* \* carbolized potash (Robinson's remedy) is valuable; the potash neutralizes the uric acid and also acts as a caustic. But it must be constantly borne in mind that none of these local applications remove the cause, and that without systemic treatment a return of the trouble may be expected. \* \* \* There are no diseased conditions so liable to metastasis as uremic troubles, and many of the so-called cures, where surgical means have been adopted, are only a change from the mouth to some other portion of the body."

Dr. Reese had also prepared for reading at this meeting a translation of a paper on the "Uric Acid Diathesis," by M. Poincot, of Paris, but the President of the Society ruled that it must go before the Publication Committee before it could be read, and it was withdrawn by Dr. Reese.

A vote of thanks was tendered Dr. Reese for his paper, but it was passed without discussion.

Dr. Reese stated in his paper that he had reached his conclusions as early as 1880, "being convinced that uric acid in the blood and saliva was the cause of grave trouble in the mouth." He said: "The subject is presented in the hope that it will invite investigation from the many earnest students of dentistry."

It is to be regretted that a puerile false delicacy prevented

the full and free discussion of the theory then presented, your reporter having subsequently been gravely informed that her presence at the reporter's table had made the discussion of such a subject out of the question! *Mais nous avons changé tout cela."*

*Mrs. J. M. Walker.*

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## DENTISTRY IN ENGLAND.

*E. Osborne Rawson.*

Great Britain has a score or more medical universities and colleges affording a complete curriculum on dental science. Many enterprising practitioners, finding the system remunerative, have established hospitals and "schools" on their own account, sending graduates to Edinburgh, London, or Dublin for degrees.

Graduates of colleges devoted exclusively to dentistry in all its branches, such as the Edinburgh Dental Hospital and School, National Dental Hospital and College, of London, and others; each send graduates before the Board of Examiners of the Royal College of Surgeons, of London, Edinburgh, or the Royal University, of Ireland, for diplomas. No college has power to create licensed dentists at will, and as there are but three licensing bodies in the United Kingdom, prospective practitioners are often compelled to travel many miles to take degrees.

General qualifications required for practicing dentists are very much superior to those expected here. In the first place, a higher standard of education is demanded. A man must pass a critical examination in surgery, materia medica, and general therapeutics. He must familiarize himself with the technical phrases in use by his more illustrious brethren in the surgical world, know everything of general interest about his profession, and be generally bright, gentlemanly, and thorough.

Of course, it is not necessary to know whether the Parthenon, at Athens, was dedicated to Minerva or Susan B. Anthony, or whether Confucius was cotemporary with Pythagoras or Josh Billings. Classical education is not expected or required, but a practical knowledge of the requirements of the profession and a thorough outside education is positively demanded.

Dentists whom I visited at Paris, Havre, Bologne, Brussels, and the principal cities of England and Scotland, gave specially interesting information in relation to the exclusiveness of foreign legislation against the indiscriminate manufacture of practitioners from the raw material.

"Nothing could be more antagonistic to the healthy superiority of British surgeons," said Sir John Tomes, F.R.C.S., L.D.S., of the Dental Hospital, of London, "than an army of incompetents—or, to speak more humanely, a horde of half-learned men. The tendency of our American cousins to specialize has, of course, produced brilliant stars, but they are eclipsed by their more thoroughly trained brethren in all cases requiring a thorough knowledge of anatomical surgery and therapeutics."

Asked if the examination was not too severe for a branch of science requiring a special knowledge of but one portion of the human system, he answered promptly: "Not in the least. It is the purpose, if possible, of the Royal College of Surgeons to provide in all graduates holding diplomas the thoroughness of a competent physician—a man who can build a reputation for himself, not only in dental surgery, but in the minor branches of *materia medica*. And I do not think you will find in all England a dentist who would not willingly undergo the strain again, if necessary, as these 'rigid examinations' that appal students from your country are the very doors that lock themselves against those who would slip in on technical inferiorities. Those who pass successfully, deserve the honor; while those who do not, nerve themselves to closer study and sterner application to the underlying principles of true worth and honorable competency.

"A strange antagonism exists between the medical and surgical fraternity against dental specialists. Specialism in any branch of professional or commercial life finds its enemies in the more widely read and generally superior advocates of 'all-round education.' A trade or profession in Europe is not learned one-sidedly by any means. Thoroughness is the watchword, and all energies are bent to that end, with the result that graduates undertake any branch of their profession with perfect confidence. I can see no method in the madness that graduates students with an off-hand knowledge of studies. There is profound satisfaction in the realization of being thoroughly 'up' in one's profession, and the gratification of having learned thoroughly that which less energetic students considered unimportant is the keynote of success."

But even full-fledged physicians are being turned out rather hastily in thorough-going England, as is evidenced by the following extract from a letter to T. Cooke by Dr. William Bruce, a member of the General Medical Council, and a direct representative for Scotland: "Men are now being turned out as qualified who are unsafe to be trusted with the lives of patients. Men pose as doctors who are unfit to appear on the register of duly qualified medical practitioners, and who, as such, are frauds on the public."

That dentists should be subjected to such rigid examinations before the Royal College of Surgeons, while physicians are being manufactured by the other august body of life-savers that are confessedly unworthy the name, is one of the incongruities that paralyze the understanding.

The usual course for all colleges and schools in Europe is as follows :

Dental Anatomy and Physiology.

Dental Mechanics.

Dental Metallurgy.

Dental Surgery.

Dental Operative Surgery.

Dental Materia-Medica.

Elements of Histology.

Elaboration or modification of this course lies with the doctors-in-chief or lecturers.

The title of "Doctor" is not conferred with degrees. A sense of the ambiguous pervades the contrast between graduates who receive no title, and their superiors who parade the majesty of "L.D.S.I.," "F.L.S.," "F.R.C.S.," "F.R.S.," or "M.R.C.S.," before an awe-struck public.

Whether the bestowal of these handles adds to the measure of a man's popularity is an open question, but they are certainly not granted through any magnanimity on the part of examining boards. In plain words, a man is not a "doctor" in the popular acceptance of that term unless supplied with a diploma from the Royal College of Physicians. He must travel handleless through the world, known only by the common-place title bestowed on the humblest of our citizens.

There is all the difference in the world between the British doctor who is a dentist, and the American "doctor" in the same line. The latter is a dentist, pure and simple; the former, a full-fledged physician practicing dentistry, perhaps, as a side line. In any event, the advantage of the American student in being made a "doctor," when but one branch of minor surgery has been studied, is apt to confuse foreigners, who, in critical or desperate moments would prefer to discriminate instantly between their men.

If a suggestion would be of service, I think the suffix, "D.D.S.," applied to the names of dentists in this country having no other knowledge of materia medica or surgery than that acquired in the lecture room of a dental college would be sufficient, leaving the term "Dr." to those more entitled to it by reason of more universal studies in anatomical surgery and therapeutics.

Sir Edward Saunders, F.R.C.S., of the National Dental

Hospital, spoke earnestly of the rapid multiplication of students and colleges in the United States. "It is only a question of time," he said "when the supply will far exceed the demand. Patients are not inveigled into the chair by reassurances of superior work with a minimum of pain. Stern reality is about the only cause for landing patients in the chair at all; and while clever surgery ignores wounds and momentary pain, we cannot overlook the importance of *competency* in the various branches constituting the finished course of well regulated colleges. There are scores of American dentists in Europe who excel in their sphere; but beyond that, are at sea. The average European physician entertains the liveliest horror of machine-made practitioners. *Thoroughness* is demanded in everything, and competency is never sacrificed to speed. The future is governed only by the experience of the past. Men bask only in the sunshine of fortune who have thoroughly conquered the rudiments of a science that require but the education of the fingers to polish the work. The cleverness of American specialists lies in continued application to one study. But ignorance of the requirements of the human system in health or disease is a serious obstacle to success in foreign countries."

Of course, Dr. Saunders spoke from the standpoint of a member of the Royal College of Surgeons. When informed that several barbarians in Paris made a specialty of extractions to the extent of from 100 to 150 a week, under the flaunting title of "British Dental Surgeons," he smiled, and said, "there were a few in the immediate vicinity. There are charlatans that disgrace every profession, and dentistry is no exception."

In conclusion, the very specialism that creates brilliant stars, can also eclipse them by the more intense brilliance of fundamental knowledge; and it is earnestly hoped that the creators of these stars will hereafter apply the principles that govern the basis of intelligent discrimination between laws that should, or should not, be learned: Whether 'tis wiser to shine brilliantly before the ignorant multitude, or prefer the ignomy of living lustreless before the more intelligent body of thorough physicians and surgeons.

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A NEW FURNACE.—The "Revelation" Oil Furnace, invented by C. H. Land, is simple in construction, easily managed, no gas-ing, and completely does away with coal, coke and gas, so that any one wherever located can use it. With this furnace there is no reason why a larger number of dentists should not introduce into their practice continuous gum work and porcelain crown- and bridge-work.

L. P. Haskell.

## THE QUALITIES OF A TYPICAL DENTIFRICE.

*A. Turner, F. C. S., L. D. S., Oxford, England.*

By a typical dentifrice we mean one adapted to general use, in contradistinction to powders having special qualities prescribed for use in special cases.

In building up our powder we have first to look for a mechanical base which shall be capable of cleansing the surface of the tooth, without the possibility of doing any chemical or mechanical damage to its structure.

We must bear in mind that the enamel, though the hardest and densest tissue in the whole body, is not impregnable; further, the edge of the enamel-cap is beveled off, so to speak, becoming thinner as we approach the gum. At the neck of the tooth there is often no enamel at all, and consequently whatever dentifrice is used will here come into contact with a more vulnerable structure—the cement of the neck and root. We are here referring to a normal healthy tooth.

Let us take care that our mechanical base is of such a nature that its constant use can do no harm to this more delicate part.

The presence of pumice stone in the base—even if used in small proportion and finely ground—cannot fail to do damage here as well as to the thinner parts of the enamel-cap. The hard angles of its particles scratch the surface of the tissues and wear them away.

Charcoal, as a base, is objectionable on account of its color; it is liable to accumulate on the sulcus between the gum and the cement, forming an unpleasant looking dark line. We are compelled, then, in choosing a base to fall back on our old friends, the chalks of the Pharmacopeia. These fulfil as accurately as possible the required duty.

We clean our teeth, then, in the same way that we clean our silver and plated goods. Indeed, to test the quality of our mechanical base we might do worse than to clean a new silver spoon with it, and then with the aid of a lens examine the surface of the silver to see whether it has been cut; if it has suffered injury let us by all means try to find a softer base.

To follow out the plate-cleaning idea one might give the fronts of the incisors a final dry polish with wash leather.

On comparing the claims of the official chalks, we much prefer the prepared to the precipitated, for every particle of the former has been suspended in water by virtue of its own lightness, whereas every crystal of the precipitated has been thrown down from a

condition of semi-suspension in a solution denser than water by means of its still greater density.

It may be contended that the precipitated form is not entirely or exclusively crystalline, but it will be admitted that it is composed largely of crystals. The mention of crystalline calcic carbonate makes us think of it in its native form—white marble; and who would think of cleaning a delicate structure with a powder having physical properties in any degree like those of marble?

Having satisfied ourselves by means of the official test that the prepared chalk does not contain silica, we have a base as nearly perfect as possible.

The presence of myriads of germs in the saliva is easily proven, and there is danger that lingering traces of either solid or liquid food may become, even in the healthy mouth, both septic in influence and acid in reaction.

We do well to counteract these tendencies by giving our base an increased anti-acidity, and also by making it antiseptic, for it is obviously necessary for the well-being of the dental tissues that the fluids of the mouth should be kept alkaline and aseptic.

A small proportion of such an antacid as bicarbonate of soda gives the necessary extra alkalinity. Only a small proportion is required, because healthy saliva is itself alkaline and our mechanical base is also slightly so.

For the antiseptic property we plead strongly for the use of oil of cinnamon. It is free from the objectionable qualities of the harsher antiseptics, such as carbolic acid or eucalyptus oil, as found in most samples in British commerce. Experiments prove cinnamon to be an efficient germ killer. We do not think its antiseptic powers are sufficiently valued. Moreover, used in proper proportion, it is pleasant to the mouth and imparts a most delightful sensation of cleanliness and sweetness.

Should the typical dentifrice contain an astringent? We think not. Most astringents are unpleasant, and consequently should be omitted, if only for the sake of the children who will be expected to use it.

We leave the embellishing of the preparation entirely to the skill of the pharmacist. As to color, we see no objection to whiteness. If this be unpopular, let us be careful to use only harmless and neutral tinting ingredients.

We welcome the fashion of putting up the dentifrice in wide-mouthed bottles with sprinklers, and condemn any method of putting up where there is a temptation to dip the wet brush in the powder.

We advise putting the fullest directions on the label. These



should include the rinsing the mouth with water after the use of the powder and advice as to the use of a soft brush. Warm water is indispensable in winter, especially for children. If the powder be only used once a day, bed-time is better than morning—but both are to be preferred.

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## SOME OF THE PHENOMENA OF REFLEX ACTION.

*Dr. W. S. Elliott, Middletown, N. Y.*

Read before the Second District Dental Society at Newburg, N. Y.

Pain is possibly the most ordinary indication of disturbance of function. The seat of pain does not always indicate the seat of disturbance.

Many anomalous sensations prove to be reflections from some remote point. Disorders of the liver often give pain under the right shoulder; renal calculi are shown by pain along the thigh; affections of the hip-joint are manifested at the knee; gastric complications are very commonly the cause of headache or disturbance of heart function; foreign bodies in the ear will produce an irritation referred to the throat or larynx; amputation of the uvula causes distinctive pain in the ear; the presence of worms in the intestinal canal will incite a persistent cough, relieved only by a discharge of the parasite. All will have observed the urectations of pain in rheumatism and gout, and the translations to different parts of the economy. Spasmodic contractions of the muscles, often excruciatingly painful, are familiar instances of reflex action. Contortions of the face, twitching of the eyelids, amaurosis—even complete blindness—wry-neck, trismus, tetanus, etc., are further examples.

It may be said that all physiological functions, whether voluntary or involuntary, are ordered through the reflex power. We instance walking and all mechanical movements of the body, as well as respiration, deglutition, secretion, etc.; and from a pathological basis, eclampsia, hysteria, epilepsy and vomiting.

The collegian has often witnessed the demonstrations of his tutors of the phenomena of excitation on the decapitated frog. These provings are evidences of the laws governing reflection—a recognition of which should have a bearing on practice.

The same abnormal action does not always create the same kind of pain. Inflammation, for instance, gives rise to a quality of pain according to the structure or kind of tissue involved. The pain may be dull and permanent, or acute, lancinating and intermittent, or insignificant, while soreness will be prominent.

These general facts are familiar to all, and the principles involved demand the attention of the dental specialist to the extent hardly appreciated by many who would rush their practice in compliance with the ignorant demands of the patient, or in violation of their own high responsibilities.

The laws governing reflex action are varied and profound in their ultimate fulfilment; the phenomena being consummated through the most exalted element of the economy, the nervous system. These phenomena are subject to a common classification, that of centric or eccentric, accordingly as the point of reflection is referred to the ganglionic or cerebro-spinal centers, or to the peripheral termination of sensory nerve fibers.

The excitants of the nervous system are innumerable, active or passive; the former when the reflex is immediate on the excitation, and passive where the force is stored within the ganglionic centers, to be evolved again under given specialized conditions. Oft repeated violence to the nervous centers renders them morbidly responsive to excitants, thus making them incapable of retaining the nervous energy. From this fact arises the many instances of reflex action and the intolerance of influences usually deemed insignificant.

Within the province of the dentist are recognizable many instances of the reflex power, both centripetal and centrifugal. The transition of nervous influence from one tooth to another is observable in every-day practice, and the more common the occurrence the more care should be exercised in diagnosis, that a misleading judgment may not be formed through the statement and experience of the patient. Probably the most common source of reflection is the third molar, to which attention should be especially directed. Here the determination of influence is centrifugal; the pain being experienced in one or more of the anterior teeth. Clinical experience in this case leads to the recognition of an irritable pulp in the affected molar rather than to any other possible condition. On the other hand, an irritable pulp of one of the bicuspid or incisors, while the pain is in a measure localized, will be reflected to the temple and forehead, ear and eye, and to all parts supplied by branches of the fifth and seventh pairs, and yet the limitation is not here always in its fullness, but through the influence of the great sympathetic the entire system becomes involved. These remote effects are perhaps still more aggravated through the agency of acute pericementitis. Now the circulation is disturbed; pyrexia ensues, and complete prostration the unwelcome sequel. Impoverished blood, and especially the gouty diathesis are prominent sources of dental irritation. Privy of

normal blood constituents leads often to toothache, as is frequently recognized in pregnancy, or in chlorotic conditions of young women. Among the proximal causes, too, is to be mentioned malarial poison, whereby the nervous energies are depleted and the system made the subject of contingent impressions. Not infrequently is presented to the dental practitioner jawache, evidently of a rheumatic origin, so diagnosed by exclusion as of this nature. Headache is also associated with anemia, which is relieved by a tonic course, together with improved hygienic surroundings.

Neuralgia of the face or jaws is not always the result of diseased teeth. Exposure to drafts affecting the system may manifest itself by pain in these parts. Sitting by an open window, in a railroad car for instance, may so modify the terminal fibers as to produce pain, resembling that of dental origin; a warm moist poultice is recommended.

A notable instance of fatal hiccough occurred a short time since in Newark. The spasm was deemed of peripheral origin, and the inferior dental nerve was thought to be implicated. A resection was made, but without avail, as the patient succumbed to the primal malady. What course of reasoning was instituted to lead to the supposition that this branch of the trigemini was involved is not clear, as most pathologists ascribe hiccough to irritation of the phenic nerve, which has its origin at the cervical portion of the spinal column. More plainly recognizable are many affections that arise from irritation of the dental filaments. Chronic spasms of muscles of mastication were recently reported in a New York medical journal. They involved the masseter, temporal and pterygoids of a woman, aged fifty-seven. She had undergone extensive dental operations, and to this and the necessity for keeping her mouth open for long periods, the spasms were attributed. Fatal spasms lately recorded were said to have been caused by toothache. The patient was in an advanced condition of pregnancy.

Records are replete with similar instances of dento-neuralgic suffering; casual reference thereto is intended only as a reminder of the responsibilities resting on the practitioner, and the possible demand of a new survey of the field for the occupancy of the coming dentist.

The general medical diagnostician, we are aware, falls far short of a proper appreciation of pathological conditions existing in the dental apparatus; and, on the other hand, for want of a broader knowledge of the possibilities of reflex influences, the specialist is unable to cope with the affections that appeal to his interference.

And here allow me to emphasize my conviction that all these associate conditions demand the dentist's attention exclusive of

that of the general practitioner, if he is to rise above the partial culture ascribed to him by his peers in medicine.

I am aware that this conviction will be opposed by many who would charge an improper assumption on the part of one denominating himself a specialist. But if your duty is confined to filling teeth and constructing artificial dentures, to you the claim does not apply. The highest prerogative of the dentist is not in these, but in being able to control the conditions that lead to the necessity of your interference. Dentistry, say you, is ever an independent profession; it is, or should be, entirely independent of the dictation of those who would ascribe to themselves the most exalted wisdom. But dentistry, on the other hand, in all its varied phases, is eminently dependent on every source of knowledge obtainable and appreciable to the aspirant; and to the degree that knowledge is possessed, so may it be utilized to the attainment of the end sought. Only in the right of exercise of his highest powers may his practice be counted independent.

There is no limit to the benefit possible to be bestowed on patients, and no limit to the right of exercise of our skill and knowledge, provided these are as far reaching; and when the higher education shall place him beyond the boundary of his present inability, then will our profession prove to the world the advanced claims of its most ardent devotees.

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#### IRREGULARITY CORRECTED BY CROWNING.

*J. S. Cairol, D.D.S., Bridgeport, Conn.*

The cuts represent models made from impressions of the mouth of Mrs. H., of Boston, Mass. The occlusion was perfect, necessarily breaking up the articulation, unless the lower arch was also expanded. I did not deem this advisable. The space between the cuspids was one and a quarter inches. The combined width of the four incisors was one and three-quarters inches. Assuming that everything moved and worked in a satisfactory manner, the least possible amount of space required would be a half inch to move and rotate teeth into proper alignment. Not believing that such amount of space could be obtained, and unwilling to submit the lady to the torture, I was about to give up the case when the idea of crowning dawned on me as the safest, best, and only practical method of correcting the irregularity. In Fig. 1 observe that the right lateral incisor overlaps the right

central, which is turned obliquely in its place, overlapping the left central, which is also overlapped by the left lateral. In this position it looks much as though it would be necessary to move the left

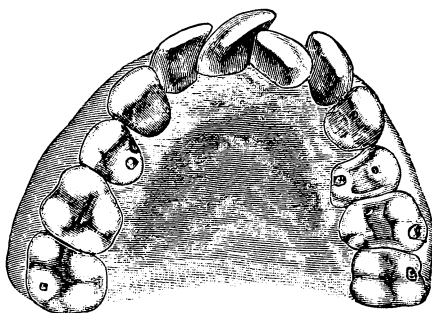


FIG. 1.

central forward. Cutting the other three incisors from a plaster cast, and standing artificial teeth in their places, I found the left central was in good position. The *modus operandi* was simply this: Excise the right central and left lateral incisors, trim down band and cap roots substituting porcelain crowns, backed and pivoted with gold in the usual manner. Having previously trimmed down and polished the overlapping point of the right lateral, I gained more space and sized up better with the other teeth. The result of the operation, which was very gratifying to the lady as well as myself, is shown in Fig. 2.

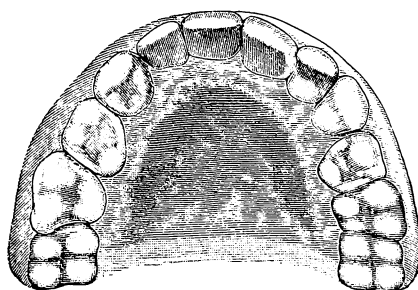


FIG. 2.

Some one might ask why not have extracted the first bicuspsids and gained space that way? The reasons are obvious—it would have necessitated the moving back of canines; it was unnecessary, and the results would have been no better, if as well. But there were no first bicuspsids; they were extracted several years ago by a dentist whom the lady consulted in reference to correcting the irregularity, who then dismissed her with the assurance that they would correct themselves.

I do not claim that this irregularity could not have been corrected in any other way, though I have serious doubts. But I believe the plan adopted was the best, and by crowning I avoided a long, tedious, painful, uncertain and expensive operation. Instead of taking several months of time, parts of two days only were required.

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I have often been annoyed at the warping of gold plate work under soldering, and I have tried many plans to counteract it. One way I find good is to thoroughly heat the plate after I am satisfied with the fit, and allow it to cool, and very often I find that I must restrike it, showing as I think, that the bends of the plate were not of a permanent nature, for on the second or third trial of heating, the form of the plate remains the same. Then I think too much investment is wrong, as the force expended by the expansion of the plate, sufficient to crack the investment, is a trial to the curves of the plate that ought not to be allowed. Let the plate expand without hindrance, and I believe it will return to its proper form.

*Henry I. Moore, L.D.S., D.D.S., Frankford, Eng.*

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## THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The thirteenth annual meeting of the National Association of Dental Examiners was held at Old Point Comfort Va., beginning Tuesday, August 7th, 1894; Dr. J. Searle Hurlbut presiding. In the absence of the Secretary, Dr. C. A. Meeker was appointed Secretary *pro tem*.

The following State Boards were represented:

*Alabama*—T. P. Whitby.

*Delaware*—D. M. Hitch, C. R. Jefferis.

*District of Columbia*—H. B. Noble, Wms. Donnally.

*Georgia*—B. A. Catching.

*Illinois*—L. L. Davis.

*Iowa*—J. T. Abbott.

*Kansas*—L. C. Wasson.

*Kentucky*—C. G. Edwards.

*Massachusetts*—J. Searle Hurlbut.

*New Jersey*—F. C. Barlow, Chas. A. Meeker.

*North Carolina*—V. E. Turner.

*Pennsylvania*—W. E. Magill, Louis Jack, L. Ashley Faught.

*Tennessee*—J. Y. Crawford.

*Virginia*—J. Hall Moore, E. P. Beadles.

The Secretary read a communication from the Board of Examiners of the State of Minnesota, insisting that their resignation, tendered in 1892, should be accepted. On motion of Dr. C. G. Edwards, the resignation was accepted.

An application for membership from the Board of Examiners of the State of Oregon was received, and the Secretary instructed to answer the same.

On motion of Dr. F. C. Barlow, the Secretary was instructed to have the constitution, by-laws, and standing resolutions to date printed in pamphlet form and sent to all members of the Association.

On motion of Dr. Louis Jack, the Secretary was instructed to have the proceedings of the Association at its meetings of 1893-94 printed in one pamphlet.

The Secretary read a memorial from the Examining Boards of New York, New Jersey, Delaware, Rhode Island, Connecticut, Pennsylvania, and the District of Columbia, regarding the necessity of uniformity in standards of examinations in different States, which, with the following resolution on the same subject, laid over last year, was referred to a committee consisting of Drs. Faught, Crawford and Catching:

*Resolved*, That it is the sense of the National Association of Dental Examiners, that when a member of the dental profession presents a certificate of registration from a State Board of Dental Examiners, duly created by law, that the same should entitle the holder of such certificate to registration without an additional examination in any State of the Union having a law to regulate the practice of dentistry; *provided*, such certificate was obtained on examination.

The committee subsequently reported, recommending the adoption of the memorial as expressing the sense of the Association.

The report was adopted, a verbal amendment to the memorial offered by Dr. Donnelly being accepted, making it read as follows:

TO THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS:

*Gentlemen*.—Delegates from the Examining Boards of New York, New Jersey, Delaware, Rhode Island, District of Columbia, Pennsylvania, and Connecticut, in conference assembled, respectfully offer for your consideration the opinion that ours is an advancing profession, our watchword is progress and we ask that your influence shall be actively directed to secure thorough preliminary examinations in every dental college in every State.

We think the true interests of our profession demand such uniformity in standards of examinations as can be obtained by State Boards always striving after higher and better attainments, and with a view to ultimately bring about a safe, judicious, and fair reception of certificates from State Boards of other States.

It is our opinion that it would be most desirable that a law whose provisions should be uniform yet whose phraseology might be different, so as to

suit differences of environment in the various States, should be enacted in all the States. It is not practicable to have any such law enacted in all the States at once; but if such a law were enacted in half a dozen leading States other States would gradually fall into line and adopt similar ones.

We are in favor of bringing responsibility for defective education as directly as possible on the offending school, with a view to making every diploma real and reliable evidence as regards the holder's ability and proficiency. Therefore we will use our influence as practitioners, as well as members of Examining Boards, to obtain the selection, by competent authority, in each State, of an independent body, disconnected from the institutions which educate, with sole authority to grant licenses and admit to practice.

*G. Carleton Brown, Secretary.*

The Committee on Colleges reported that there are now twenty-eight recognized and fifteen unrecognized colleges; that there have been no additions to the accepted schools.

The Chairman, Dr. Jack, read the following report of the numbers of matriculates and graduates at the different schools:

RECOGNIZED SCHOOLS.—1894.					
	FRESHMEN.	JUNIORS.	SENIORS.	GRADUATES.	POST-GRADUATES.
1. Baltimore College of Dental Surgery, Md. ....	47	45	40	37	
2. Boston Dental College, Mass. ....	55	55	35	33	
3. Chicago College of Dental Surgery, Ill. ....	127	116	69	58	28
4. College of Dentistry, Department of Medicine, University of Minnesota. ....	23	12	6	6	
5. Dental Department Columbian University, D. C. .	12	19	8	8	I
6. Dental Department National University, D. C. .	6	9	8	8	
7. Northwestern University Dental School, Ill. ....	33	36	25	24	6
8. Dental Department Southern Medical College, Ga.* .....					
9. Dental Department University of Tennessee. ....	16	12	12	10	
10. Dental Department Harvard University, Mass..	31	14	18	14	
11. Indiana Dental College, Ind. ....	29	32	23	23	
12. Kansas City Dental College, Mo. ....	54	36	18	16	
13. Louisville College of Dentistry, Ky. ....	54	27	10	9	
14. Missouri Dental College. ....	41	31	21	21	
15. New York College of Dentistry. ....	111	92	81	62	I
16. Northwestern College of Dental Surgery, Ill. ....	32	36	25	24	
17. Ohio College of Dental Surgery. ....	57	57	34	34	
18. Pennsylvania College of Dental Surgery. ....	100	80	63	62	
19. Philadelphia Dental College. ....	93	107	78	77	
20. School of Dentistry of Meharry Medical Depart- ment of Central Tennessee College. ....	4	3	3	3	
21. Dental Department University of California. ....	68	45	18	18	
22. Dental Department University of Iowa. ....	70	39	32	31	I
23. University of Maryland, Dental Department. ....	58	54	36	34	2
24. University of Michigan, Dental Department. ....	67	52	66	64	I
25. University of Pennsylvania, Dental Department. .	81	72	65	64	3
26. Vanderbilt University, Tenn. ....	55	44	25	25	
27. Western Dental College, Mo. ....	42	36	27	26	
28. American College of Dental Surgery, Ill. ....	128	71	51	44	77

\* No report.



UNRECOGNIZED SCHOOLS.	FRESHMEN.	JUNIORS.	SENIORS.	GRADUATES.	POST-GRADUATES.
University of Denver, Dental Department .....	9	4	3	3	8
University of Buffalo, Dental Department .....	38	32	6	6	
Cincinnati College of Dental Surgery .....	5	3	5	5	
Atlanta Dental College .....	61	31	26	26	
Howard University, Dental Department .....	6	6	5		
Dental Department Homeopathic Hospital College.	12	7	4	4	
Western Reserve University, Dental Department...	9	15	4	4	
Cincinnati College of Medicine and Surgery, Dental Department .....					
Detroit College of Medicine, Department of Dentistry	16	21	1	1	
University College of Medicine, Department of Dentistry, Richmond, Va.* .....					
The New York Dental School* .....					
Birmingham Dental College, Alabama .....	17	7	3	3	
Marion Sims College of Medicine, Dental Department, St. Louis (first session, September 11, 1894)...					
Dental Department, Tennessee Medical College*...					
United States Dental College, Chicago* .....					

\* No report.

On motion of Dr. Meeker, the following was adopted :

*Resolved*, That any State Board not represented by delegates at three successive meetings of this body should forfeit its membership.

On motion of Dr. Louis Jack, the following was adopted :

*Resolved*, That this body require the Board of Examiners in each State to become informed of the character of any school which may have been organized within its jurisdiction, and to have especial care in its scrutiny of any college which may have applied for admission to the National Association of Dental Faculties.

The following were elected officers for the ensuing year :

L. Ashley Faught, President; J. T. Abbott, Vice-President; Chas. A. Meeker, Secretary and Treasurer.

After which the Association adjourned to meet at the time and place appointed for the next annual meeting of the American Dental Association, this body to convene at 10 A.M., on the day preceding the date set for the meeting of the American Dental Association.

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**HANDY DENTIMETER.**—Take ordinary binding wire, make a loop near the size of the root or crown you wish to measure, insert the free ends into a nerve broach-holder, tighten and twist the wire closely. You will have a correct measurement of root.

*E. B. Edgers, D.D.S., Waterloo, Iowa.*

## TEMPORARY DENTURES.

*Dr. C. H. West.*

Will you allow me to explain my method of inserting teeth where they are wanted as soon as possible after extraction. I first have water hot, in which to soften modeling compound, and then extract the teeth, and take the impression as soon as I can, so as to get it before the swelling takes place. In the model I deepen the depressions caused by the removal of the natural teeth and insert the porcelain teeth, as near as possible like the natural ones, and finish the plate as soon as I can and get it in the mouth. The false teeth may be inserted farther in the socket than one would think, without any inconvenience to the patient after the first few minutes. The gums settle around the teeth very naturally, and as the gums shrink the teeth still have a solid foundation. I inserted teeth that way seven years ago that are still giving perfect satisfaction as to fit and appearance. In replacing the four or six anterior teeth I always like to follow this method when it is practical to do so. In case a patient does not want to appear without teeth, I sometimes take the impression before the teeth are extracted, cut off the teeth on the model, and dig out for the porcelain teeth to correspond with the teeth to be removed, and scrape off a little from the palato-gingival margin of the ridge and make the plate, and then extract the teeth and put in the plate immediately.

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FOR A SWEET BREATH.—Don't expect to have clean teeth or a sweet breath while there is a tinge of white on the tongue. It is an unmistakable evidence of indigestion. Drink sour lemonade, eat ripe fruit and green vegetables for purgatives; exercise freely; use plenty of water internally and externally; and keep up the treatment till the mouth is clean, healthy and red.

Various things are suggested to counteract an unpleasant breath resulting from a bad tooth, wine, or garlic-scented dishes. Cinnamon, mint creams, orris root, cloves, mastic-resin, and spruce gum, will disguise some odors. Ten drops of tincture of myrrh in a glass of water will sweeten and refresh the mouth; a teaspoonful of spirits of camphor or peppermint in the same gargle is among the best antiseptics; and a few drops of myrrh and camphor in the water are recommended in case of cold, throat trouble, or any slight indisposition which may affect the breath.

# CURRENT THOUGHTS.

## PEROXID OF SODIUM.

*Dr. William J. Turner, Brooklyn, N. Y.*

Peroxid of sodium has been introduced to us as both a bleacher of discolored tooth-structure and as an antiseptic and disinfectant. Like peroxid of hydrogen, it is an active oxidizer from the facility with which it parts with one atom of oxygen, and it is a saponifier and solvent of oils, fats, and of the pulp-tissue.

We all know that in the treatment of teeth having dead pulps, what we have to fear is the incomplete removal of the pulp-tissue. If it has been recently devitalized, adhesions between it and the walls of the canal may be so strong as to prevent all coming away in mass; in tearing it out piecemeal, parts may be left. If longer dead, it may be so softened as not to possess sufficient cohesion to be removed entire. Then there are those many canals that we all meet that are so small or curved as to defy our best endeavors to penetrate. The decomposition that may follow is always the primary cause of what trouble may occur. A tooth is of a porous structure and absorbent, as the difference between a specimen out of the mouth and one in will show. If absorbent, it will become permeated with any liquid substance that may be in the canal. When a pulp dies and decomposes in a tooth, therefore, we have an infected state, not only of the canal, but of the dentine itself. Experiments quite elaborate have been conducted by Miller to show that none of these products, liquid or gaseous, will penetrate outward to the pericementum and give trouble.

When we consider the great vitality of the germs with which we are dealing, and what is needed for their destruction, we may well despair of ever rendering a tooth which has become infected absolutely sterile. For instance, we have been taught by those who have experimented scientifically that the only way in which an instrument may be entirely disinfected in the reasonable time of a few minutes is by immersion in boiling water. If, then, this much is required for a smooth, polished surface of metal, how much more for complicated tooth-structure, and where the mass of the tooth is so great compared with that of the agent employed, as is necessarily the case in the mouth.

Dr. Ottolengui, says: "Let us admit that none of us get access to some canals, and then find a way of treating them. I had not the least idea, two or three months ago, that the treatment of

inaccessible canals would be so quickly solved, for it seems to me that in talking about the bleaching properties of peroxid of sodium, we are overlooking a very much more important usefulness. It will go into every one of the tubuli, destroying and dissolving the organic matter there, and throwing it out. If that is true, it will completely sterilize the fine canals in the distorted and narrow roots of molars which we cannot penetrate. They are as much larger than the tubuli as they are smaller than the other canals. Here we have exactly the method we are looking for—a method of treating those inaccessible pulps medicinally by dissolving and ejecting their contents, at any rate sterilizing them. It prevents abscesses."

A young lady came to me last October, the right central and both laterals putrescent. The previous winter a dentist, while preparing the pulp-canals for filling, had drilled through the side of the root about half-way up to the apex in all three of them. She was displeased with the treatment and went to another dentist, with whom she had fifteen sittings of only about five minutes at a time, long enough for him to change the cotton and renew his medicament in the root. During all this time the teeth would immediately become so sore, on any attempt to stop up the canals tightly, that it was necessary to have the dressing applied loosely. As there was no improvement in the teeth, she allowed them to take their course, nothing being done to them while she went away for the summer. In October, when I saw her first, the teeth were much discolored, quite sore, and loose, and from the canals there was a constant discharge of pus. The cavities which had been made in the palatal surface were much enlarged, so that when the débris, which had long been collecting, and the carious matter, had been removed, very little of the crowns was left except the enamel, the teeth now presenting a pretty good color. The decay also extended down the walls of the canals, making them very large down to the opening at the side. After many trials and spending much time, it was found impossible to penetrate the canals beyond the false passage, they probably being very small, or the original accident would not have occurred. Here, then, was a case in which, from what has been said, we would expect benefit from peroxid of sodium, owing to its action on the contents of the upper ends of the canals, where an instrument would not go. The teeth were treated one at a time in the same manner, and followed a like course. The rubber-dam having been applied and the cavity and canal cleaned with instruments as much as possible, a saturated solution of peroxid of sodium was introduced, allowed to remain a few minutes, and washed out with warm water, repeating this several times. Then a fifty per cent aqueous solution of

zinc chlorid was placed in the canal, and the whole temporarily covered over with gutta percha. This was removed in a week, the tooth meanwhile being greatly improved, and the same treatment repeated, after which the canal and cavity were filled with oxichlorid and the surface covered with oxiphosphate, first pressing a pellet of soft gold down into the canal to occlude the opening in the side of the root made by the drill. The teeth now are almost as firm as their neighbors, they are useful, not objectionable in color, and the young lady is much pleased with the results.

*Cosmos.*

### MATURED THOUGHT.

*I. P. Wilson, D.D.S., Burlington, Iowa.*

Seed time must precede harvest, and sufficient time must intervene for germination, growth and maturity, or a rich fruitage may not be expected. Nature demands time for the series of progressive changes that must take place before the products of the orchard and the field are matured and ready for man's use.

So it is with a conception of a thought or an idea. The germ of a great truth may suddenly spring up in the mind, but in its immaturity it may be warped with error, deformed by unscientific reasoning and robbed of the very semblance of truth by thoughtlessly jumping at a conclusion.

I remember many years ago of a prominent dentist who would become very enthusiastic over some new idea that had suddenly dawned on him, when he would rush into our society meetings and into our dental journals with his newly-acquired treasure, and with mouth and pen deal out his immature thought to the brethren, who well knew that what he said must be taken at a heavy discount. His teachings were theoretical, not practical. Young practitioners were often misled till sad experience revealed the error, and disclosed the truth. I recollect on one occasion while speaking before our society with considerable enthusiasm on some new born thought that had, on the spur of the moment, sprung up in his mind in connection with a discussion that was going on at the time, when he suddenly stopped, and said, "Well, I see that I have gone off half-cocked again." He had reasoned himself clear off the grounds he had taken, and with flushed cheek, and amid the merriment that followed, he took his seat. On another occasion while drilling out an old amalgam filling, it occurred to him that some agent ought to be employed to dissolve that filling without so much physical labor on the part of the operator. He commenced

theorizing, when the happy thought occurred to him that as mercury will produce crystallization, it ought to reduce it. He immediately jotted down the thought, and incredulous as it may seem, without ever making a practical test of his new theory, he hurriedly sent it off to a dental journal for publication. Soon the item appeared, and was afterward republished by one or two other dental journals.

How many dentists put their so-called valuable discovery to the test does not appear, but as the gentleman was well and favorably known, it is fair to suppose that not a few eager ones tried the experiment.

In justice to our theorizing brother, I ought to say that he was a pioneer in dentistry, and has furnished the profession many valuable suggestions of a practical character that have had much to do with our successful practice to day. His speaking and his writings were of a gushing nature, and occasionally gems of thought would drop from his pen and his lips without any apparent study. Indeed, there are many examples of living thought being thrown out on the world, which seem to have been the result of sudden inspiration, and not of labored study. But these bits of jewels usually come to us in short sentences, and in the simplest language. A scientific paper, with a chain of thought and reasoning must be wrought out from careful study; from labored thought.

A man who values his literary reputation cannot afford to offer his writings to a scientific society or to a critical profession without the most diligent preparation—without matured thought. The unstudied thoughts of a careless writer usually perish with their using, while the writings of the careful student live to bless mankind. The one furnishes crude material, the other refined, ripened thought, ready for use. The one furnishes chaff, the other garnered grain; the one dross, the other gold.

What we offer should be condensed, boiled down thought. What we write to-day should be revised and rewritten at a later day, when much redundant matter will be discovered and cast aside. Thoughts covered up with a multiplicity of words must be divested of their covering, that the naked truth may be revealed. Let any one hurriedly select a theme on which to write, and then on limited time study to manufacture thoughts in connection with his subject. He will find it hard work to write, and his readers will find it still harder to read with satisfaction and profit what is written. And should the author himself lay aside his hastily written paper, and dismiss it from his mind for a few months, he will scarcely know his own production when he reads it again, and will be surprised at its ambiguity and incoherency. I speak

from experience when I write this, as well as from the testimony of others.

It is said of some of the best writers for our dental journals, that they tax their brains to the utmost, in grinding out every sentence they write. But their writings do not seem to be labored. They read smoothly, as if their thoughts had flown easily and frequently from a ready pen. Many of them only prepare two or three papers yearly, but they are worth reading when they are published.

Of course, the writer or the speaker who is in daily practice has an immense advantages over men whose time and attention are taxed from morning till night, day in and day out, as are the members of the dental profession.

Let us disabuse our minds of the thought that literary work is light and trifling, and let us remember that "there is no excellence without great labor."

*Review.*

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Speaking of the dental preparation of students in England, the editor of the *British Journal of Dental Science* says: "Three years' training with a practitioner is required. The fact, however, is that the teacher's ideas of responsibility and power of imparting instruction are not cast in a uniform mold. We have heretofore called attention to the laxity of the regulation, which merely requires a certificate that the pupilage of three years has been complied with, leaving it optional with those immediately concerned as to the amount of the instruction resulting. For this and other reasons Dr. Jacob, in writing to *The Freeman*, has endeavored to show that the apprenticeship should be abolished, and has compared it with the old medical system, which is practically obsolete. He seems to be under the impression that the same subject, dental mechanics, is taught again during the hospital curriculum, but this is not so. The hospital student certainly does have the benefits of a course of lectures on the subject, but no systematic practice in manipulation is necessarily provided. Only one of our dental schools, we believe, undertakes the three years' training, but we shall be prepared to find that the others will follow the Edinburgh example as time goes on."

From these statements it does not seem to be time yet for Englishmen to boast very much of the great superiority of their standard of dental requirements over us in the back woods of America. For in addition to this preliminary tutelage to some registered dentist the English law requires but two years in a hospital.

## OXIPHOSPHATE.

*Dr. W. G. A. Bonwill, Philadelphia.*

That it will preserve tooth-structure from further decay admits of no doubt whatever.

That it will preserve the contour of the tooth is certain in the bulk of cases.

That it will not destroy the pulp in near contact with it is equally sure.

That it will preserve tooth-structure with nearly all the decay left in the cavity and without much or really any shaping is incontestable, which I will show for a fact that I am willing to stand by and form a part of the new era of which I am here to speak. It is beyond value when you know how to mix it, how to manipulate it, how to shape it, how to treat it before you remove the dam or allow it to get wet, how to treat the phosphoric acid, to keep it from crystallizing, insuring you thereby a better result in every way, and when the proper precautions are taken with these fillings, how inestimable are the results, and beyond cavil and doubt.

I cannot say too much for it,—a good article. But, just here let me say that, when you can get a good article use no other kind in the mouth. The oxiphosphate, of course, will have to be kept absolutely dry to be a perfect success.

*International.*

EDITOR ITEMS :—Reading in the ITEMS OF INTEREST for September an extract from the *Cosmos* about American Dental Competition in England, I would like to ask a question to, perhaps, help on a mutual understanding between American and English dentists. What degree of value has the English diploma in America?

Can a dentist possessing only this diploma practice anywhere in America, or is it worth nothing to him? If this is the case, as I believe it is, is it quite fair for American qualified dentists to expect to be allowed to practice in England only on their diplomas? I certainly think England should give to Americans the same advantages as America does to Englishmen, viz.: An allowance on their diplomas in the time required to study for the English diploma, so that they would only have to study for one year and pass the same examination as the English students. If this were done, I think everything would be square between the two countries, and the petty little jealousies might be allowed to drop.

*Henry I. Moore, L.D.S., D.D.S., Frankford, Eng.*



## OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

**Question 172.** *The professor of the California State Normal School asks: Why does a child have two sets of teeth—temporary and permanent? Why would not one set suffice?*

To provide proper mastication and harmony of features.

*F. J. Bradner, Pulaski, N. Y.*

(a) Because a child's mouth at the age when all the temporary teeth have erupted is about three-fifths the size of an adult's, and consequently the teeth must be small in proportion.

(b) Because the all-wise Creator saw that teeth the size of the permanent set would be unsightly in a child's mouth, and *visa versa*.

*Henry Pirtle, D.D.S., Louisville, Ky.*

In the first place it was one of the provisions of the all-wise Creator in His plan of beauty. How would a child look if at the age of two or three years it had a mouth and teeth the size of an adult? And then, unless the plan of ossification was different, teeth at that age would not be developed to such an extent that they would withstand the wear and tear of a lifetime.

*A. A. Kunler, Cincinnati, O.*

The child has two sets of teeth because it was so ordained by the Creator. The all-wise God starts the child in life in an undeveloped state, and in obedience to the laws governing the growth and development of the maxillary both sets are required. If the child had been given a matured body on the out-start then, perhaps, one set would have been sufficient. But just why this was not done, and why the goose was not given wool instead of feathers, are questions for Jehovah to answer.

*J. A. Collier.*

In the first place the Creator could see farther into the future than we poor mortals can imagine, and He saw that to give them only one set of teeth would not be in harmony, as everything is, that He created. First, a child, of necessity, must be small when born into this world. Imagine, if you can, a man with a head and mouth of proportionate size to accommodate twenty teeth the size of deciduous, or, the other extreme (if possible for the child to be born); imagine an infant with a head large enough to accommodate an oral cavity of sufficient size to allow thirty-two or twenty-eight teeth the size of our second dentition. Now, if you were to see "a something" with these peculiar and interesting dimensions, would you not think a Barnum had had something to do with the plan? Harmony is nature's decree, so we will have to let it be.

[Not intended for publication, but we take the liberty.—E. N. F.]

Dr. Francis: Of course my answer argues from one point. We could argue on the line of composition of teeth, the usage of teeth for children, and later for adults, but I think we want harmony. If nature in all her grandure was not in harmony, what a world of discord we would have. For

instance (a light illustration compared to nature), take a musician and let him try to produce music without his instrument being in tune—the strings not in harmony one with another. Instead of being able to say, “That music hath charms to soothe the savage beast,” we would be forced to say that the discord, created by each vibration of the individual strings, would grate on the nerves of all civilized persons till they would snap and snarl and in a measure become savages. Harmony! Harmony, my brother, is what we want and must have in all things.

*J. F. Johnston, D.D.S., Ruston, La.*

[Of course, nothing is impossible to our Creator. One set of teeth would do, but if we were to change the order of things to benefit humanity, a provision would be made for the eruption of a new tooth to take the place of a lost member, that a full set could always exist, and the dentist find other business. In order that one set of teeth suffice, it would be necessary for the teeth to erupt at lengthened intervals, in size proportioned to the jaws, with a power of development or growth corresponding to that of the body. If all things were perfect death would be unnecessary, and the eruption of teeth would not so often give employment to the dentist, physician, and undertaker. Thousands obtain a living through the imperfection of teeth, and these little failures in nature—produced greatly by civilization—provide a means of living, and a variety of work to suit the present order of existence. We all know the accidents of childhood, and that many teeth are broken, or entirely forced out, by falls, etc., which are replaced by the permanent set at a time in life when our footing is more sure and judgment saves us from sad experience. If we were provided with but one set of teeth, I think, if the professor had been a reckless boy, he would have propounded a different question, and asked why the present order of things did not exist?—E. N. F.]

**Question 173.** *Can a broken gold filling be patched with silver amalgam, where amalgam is out of sight, with good results?*

Yes.

*J. A. Collier.*

Yes, if there is sufficient tooth structure to cut a groove in dentine as well as gold. The question is somewhat obscure.

*Henry Pirtle, D.D.S.*

If the filling is firm and doing its duty, except where broken, I would try to patch it. If there are any doubts as to the preserving qualities of the filling, take it out and refill.

*A. A. Kumler.*

Yes, but can as well with gold, by cleansing with chloroform, burring the surface and drying with hot air.

*F. J. Bradner.*

The question will admit of many suppositions. We can suppose that filling in thousands of positions, but I think it can be done.

Why not put on your rubber-dam, cut out little more of the filling—be sure and get it dry—and mend with gold; or, better still, remove all of the filling and refill with gold if the tooth is sufficiently strong to admit of so doing.

In cases of a very frail incisor I sometimes build out nicely with alloy, and at a future time cut out all alloy in sight and replace it with gold. This makes a pretty piece of work and I call it a success.

*J. F. Johnston, D.D.S.*

**Question 174.** *About three weeks ago I administered gas to a gentleman, about twenty-eight years of age, and extracted the second lower molar on the left—it being the only tooth remaining on that side. The tooth was firmly set, and hard to remove, but was extracted without breaking tooth or process.*

*When patient recovered he complained of a numbness of left-side of face, confined principally to the lip and extending from the median line about half way to the angle of jaw.*

*Three weeks have shown little improvement. Exposed to cold air it feels hot and burning, while an opposite effect is produced on returning to a warm room.*

*The circulation seems normal. Can you suggest cause and treatment?*

It has effected the inferior dental nerve. Try a battery.

*F. J. Bradner.*

I will not attempt an answer as I know nothing about gas, but had you not said the circulation was normal I would have thought it a partial paralysis, or possibly paralysis venemata.

*J. F. Johnston, D.D.S.*

The inferior dental nerve must have been injured or bruised by the act of extraction, and will take time to recover.

I would give, internally, four doses per day of five drops of hypericum, third decimal dilution. I know of nothing better for bruised nerves.

*A. A. Kumler.*

When the heat reaches about  $700^{\circ}$  the mercury begins to distil off, rising in white fumes. It is very important that these fumes be not breathed. The fire should be so arranged that they are carried off by the draft. If the heat is applied too rapidly the contents of the crucible may be violently thrown out. After visible fumes cease to be given off I hold the polished face of a cold hammer over the crucible for a moment, and if any mercury is still escaping its presence is indicated by coating the hammer with minute globules. When the mercury seems to have been completely expelled, add a little borax, increase the heat to a full bright red, and after a few moments pour in the ingot, holding back the dross with an iron rod.

To avoid disappointment, before attempting to refine—*i. e.*, separate the metals—a little simple arithmetic may be in order. We may assume, roughly, that dental alloy prepared for amalgamation averages less than half an ounce of pure silver to each ounce of alloy. We may also assume that each ounce of waste is about half mercury. One ounce of waste contains about one-fourth ounce of pure silver—will hold good with most of the alloys now on the market. Gold, the other metal of value it is likely to contain, would amount to so little in several ounces of waste that its isolation, while interesting as a chemical experiment, would cost far more than its worth. Now pure silver is worth at present from 65 to 85 cent an ounce, the price fluctuating from day to day, and is from ten to twenty cents an ounce less in large quantities. We may also consider that there is always an actual loss in all refining process; that this loss is nearly as great in refining one ounce as in refining twenty. Before beginning we can thus

proximate the value of the maximum amount of silver possible to recover. We can easily, by consulting any text-book on chemistry or metallurgy, closely proximate the cost of acids, etc., required, and decide whether the probable gain will compensate for the time, the injury acid fumes may cause the soiled hands, and possible injury to clothing.

I have taken so far no account of the mercury. By placing the waste in an iron retort, with suitable connections, the mercury can be recovered. I have found it always contaminated and not in a condition for immediate use for making dental amalgam, and I so far have failed, after repeated efforts, to make it usable for that purpose at a less cost than new can be purchased for. It complicates matters, and a narrow escape from accident convinced me that the attempt to save it might prove expensive economy.

In the old days (may they never return), when we had to refine our gold and silver, and the laboratory was properly equipped for such work, and the workman in constant practice, we thought no more of it than running a plaster-cast. The method is simple enough, and may be found in any good work on metallurgy. It is interesting as a laboratory experiment, but as a matter of economy, with less than a pound or two of waste to work on, it does not pay. I have done it hundreds of times, and that has been my experience.

*William H. Trueman, Philadelphia, Pa.*

*Practical Answers from Dr. Hazeltine on last month's questions.*

No. 1.—I know of no better method than to take an impression, scrape down the sharp, projecting "saw teeth" on model, and make a plate from it to wear for a time. I often put on no teeth, but get an articulation of lower teeth in rim of wax (on gutta-percha plate), and thus make something they can chew as well with, or better, than if teeth were put on plate. To be sure, it will bear hard on and hurt the prominences you have pared, but pressure will soon cause them to disappear. This can do no harm. I have never practiced trimming the alveola.

Patients find less fault with, and make less fuss about wearing teeth (aside from the soreness of gums at first) put in within one or two weeks of extraction than should you wait a month or so, and I find they are less likely to ever have a second set—so far as fit and use is concerned. I account for this by the gums being so soft they fill into the plate by reason of its pressure; whereas, if you wait a month or so, there is but little change in the tissue, but mostly in the bone, and the fit is lost.

I find few people, except the lady patients, would have a second set were it not, that where put in so soon, the teeth go up out of sight and the lip falls in, though quite generally satisfied with the fit. To be sure, there is not much real fit to a plate put in so soon and worn a year or so, but the confound fit and familiarity from long use.

No. 2.—Near as I can understand by your description, I have met with decidedly better success by leaving out vacuum cavity. Should scrape well each side of hard ridge of model, and scrape center of plate where hard ridge is, to ease pressure on unyielding surface. My theory is, that where two hard and unyielding surfaces meet, it is next to impossible to make the plate airtight on palatine edge, and my idea is that the cavity serves as a reservoir for just that much extra air. We sometimes meet with cases that are the "devil's unaccountables," and act from "pure cussedness."

*A. A. Hazeltine, New Bedford, Mass.*

## PRACTICAL POINTS.

**Superficial Decay.**—Remove the softened portions; polish the surface; rub nitrat of silver well into the dentine, using a warm burnisher. Varnish the surface to hold the remedy till taken into the organic matter of the tooth. *A. M. Holmes.*

**To Bleach a Tooth.**—Wipe out the prepared cavity with carbonate of ammonia, to neutralize possible acidity. Wrap a swab of bibulous paper on a gold probe, and saturate with pyrozone, twenty-five per cent. Moisten the cavity and exterior surface of tooth liberally, evaporating by blasts of hot air. Repeat till all color is discharged. *Charles A. Meeker.*

**Pulp Devitalization in Deciduous Teeth.**—Apply crystals of nitrat of silver directly to the exposed pulp.

*A. M. Holmes.*

**Inaccessible Root-canals.**—Impregnate the contents with an antiseptic, as follows:

R.—Sublimat ..... .0075  
Thymol..... .0075

In a small tablet.

Crush, and place in the botton of the pulp chamber, after thorough cleansing. Cover with a layer of tin or gold foil, and fill immediately as desired. *W. D. Miller.*

**To Lessen Irritability of Fauces in Taking Impressions.**—Have the patient gargle with a strong solution of tannin, potassium bromid, or camphor water; or apply a five per cent solution of cocain lightly over the soft palate. *J. W. White.*

**Sterilized Sponge in Treating Chronic Abscess.**—After buring out all desired bone (and root amputation, wholly or in part), fill the space with sterilized sponge (prepared by keeping it in a solution of two grains bichlorid of mercury to an ounce of boiled water, at 164°, for perhaps half an hour).

*Gordon White.*

**Root-canal Filling.**—Cotton, saturated with creasote or carbolic acid and iodoform, then dipped in oxid of zinc powder, and packed to the apex with a small, stiff, steel broach, makes the best, the most easily adapted, the most certain in application, and the most easily removed root-canal filling in case of subsequent trouble.

*T. P. Hinman.*

**Bleaching Teeth.**—Apply the dam and remove all decayed matter. Wash with water of ammonia; dry carefully and apply a saturated solution of oxalic acid, being careful not to allow contact with enamel, neutralizing any accidental touch with ammonia; leave the acid in place about five minutes; wipe out with cotton and apply ammonia to neutralize any left unabsorbed. Repeat two or three times, and fill with gold without cement lining, which discolors with this bleaching process. *J. E. Hinkins.*

**A Gage for Root Canal Filling.**—Place a small disk of rubber-dam on a fine instrument and measure the depth of the canal. When you place the first portion of filling material in the canal the disk indicator will show if it has reached the apex. Measure as you proceed with the operation, and you can be certain of what you are doing. *N. T. Shields.*

**Pyorrhea Alveolaris.**—Finger-massage of the gums, accompanied by the use of stimulating lotions such as listerin, is of decided benefit as an aid in restoring an approach to normal circulation in the tissues. *Dr. Howe.*

**Root Canal Filling.**—Partially fill the canal with chlorid of zinc, and place in the cavity, cotton saturated with it. Leave in place two or three days to coagulate the organic tissue in the dental tubuli. Then fill the canal with oxichlorid of zinc, and complete the filling as desired. *Jas. Truman.*

**Chronic Alveolar Abscess.**—If the foramen is not readily opened, "the fractional part of a drop of aromatic sulfuric acid, held in position in the end of the canal on a few shreds of cotton for twenty-four hours, will usually effect an opening unless exostosis exists." *Geo. Evans.*

**To Prevent Adhesion to the Teeth, or Fracture of a Plaster Impression.**—Add to the plaster from a third to a half pulverized pumice. *L. C. Ingersoll.*

**Root Canal Filling in Deciduous Teeth.**—Remove as much of the contents as possible, and fill loosely with cotton saturated with iodoform, with a little oxichlorid of zinc entangled in the cotton. *S. G. Perry.*

**To Perfectly Dry a Cavity.**—After applying absolute alcohol, use a solution of sandarac and ether to line the cavity; dry this with hot air, which forces it into the ends of the tubuli, completely sealing them. Then proceed with the filling. *Southern Dental Journal.*

**A Perfect Occluding Crown.**—Fit band to root, trimming edge to proximate occlusion; fill band with moldine or plaster, and have patient close naturally, giving imprint of occluding cusps.

Remove and invert into fusible metal almost cold. Drive gold plate home into the mold with lead. *W. H. Whitslar.*

**To Make a Difficult Full Lower Plate Stay in Place.**—Dissolve soft rubber in chloroform, and coat the model to hold in place a thin layer of soft rubber, to form a flexible lining to the entire under surface. Pack with hard rubber as usual, being careful not to have any surplus of hard rubber to crowd the soft rubber out of place. *J. Allen Osmun.*

#### Dickinson's Pulp Capping.—

Powder—Oxid of zinc and iodoform.

Liquid—Beechwood, creasote and genol.

A non-irritant, antiseptic pulp protector, useful in exposure or when a thin layer of semi-decalcified dentine remains over the pulp. Use in conjunction with asbestos paper or a metal cap. *Thos. E. Weeks.*

**Amalgam Fillings in Porous Dentine.**—Burnish tinfoil to the walls of the cavity (not reaching to the margin) before inserting the amalgam, thus presenting an amalgam of tin to the dentine. The dentine will not discolor, and shrinkage of the plug is prevented. *S. B. Palmer.*

**Bands in Bridge-work.**—Cement on a gold crown as abutment. Make the removable band of clasp-metal, which will not bend nor stretch, but will always fit tightly. *C. M. Richmond.*

#### Phenosalyl—An Antiseptic.—

R.—Carbolic acid..... 6 parts.  
Salicylic acid..... 1 part.  
Lactic acid..... 2 parts.  
Menthol.....  $\frac{1}{10}$  part.

Can be made non-crystallizable by the addition of a little glycerin. Soluble in fifteen parts water, or less of alcohol or ether. *de Christmas.*

**Root-canal Filling.**—With a Dunn's syringe inject a drop or two of saturated solution hydronaphthol in chloroform. Place a gutta-percha cone in the canal, as near the apex as possible, where it will dissolve, forming chloro-perch *in situ*. Follow up with cones till the canal is filled. Simple, clean, antiseptic, effective. *S. Freeman.*

**Replantation in Chronic Alveolar Abscess.**—Extract the tooth. To a glass of boiling water add three or four drops of five per cent alcoholic solution of hydronaphthol. Wet the corner of a napkin in this antiseptic fluid, with which to hold the tooth while removing the abscess sac, and cleansing and filling the root canal. To fill the canal moisten it with chloroform, and insert a gutta-percha cone, trimming off the projecting point at the apex.

Syringe out the socket with the hydronaphthol water, insert the tooth, and ligate. If the tooth is too long, trim off the grinding or cutting edge, rather than sacrifice pericementum by trimming apex.

*George A. Sullivan.*

**Relief of Pain in Recently Exposed Pulp.—**

R.—Four per cent solution cocain..... 20 parts.  
Oil of sassafras.....30 parts.  
Carbolic acid (melted).....50 parts.

Apply as local covering. Shake bottle before using.

*A. W. Harlan.*

**An Improved Method of Packing Rubber.—**Varnish cast with shellac, and cover with No. 20 tinfoil; burnish smooth. With tweezers take up a piece of vulcanite, dip it in chloroform, and paint over all the surface of the tin, giving a surface to which the rubber will adhere and stay where put. Cut the vulcanite in small pieces (half inch or more), and press each piece firmly down. Build up around the teeth as desired. Smooth all prominences with a warm spatula. Plate will be dense, tough and strong.

*I. S. Latimer.*

**Anodyne and Astringent Mouth-wash.—**In laceration of tissues after extraction.

R.—Boracic acid.....3j  
Chloroform.....fl 3ij  
Ext. hamamali virg. fl.....fl 3j  
Listerin.....fl 3j

Teaspoonful in warm water several times daily.

*J. Henry Morgan.*

**Pericementitis.—**Aconit and chloroform, equal parts, applied locally at frequent intervals till the sensory nerves are paralyzed and arterial tension lessened. Followed by painting the gums with iodine, which is then more readily absorbed and carried where most needed.

*W. H. Sedgwick.*

**To Retard the Setting of Plaster of Paris —**Mix with it 2 to 4 per cent of powdered althea root before stirring into the water. With 8 per cent althea root powder it will remain plastic for an hour.

\* \* \*

**Pulp Capping.—**Use a solution of sulfur in ozonic ether.

*Boyd Wallis, England.*

**To Evacuate an Alveolar Abscess.—**Plug the hole of a rubber-polishing cup with gutta-percha. Wet the inside of the cup, and place it on the gum over the opened abscess; gently press the cup flat on the gum, and then remove the finger. The elasticity of the cup will cause sufficient suction to fill it with abscess contents, and even draw through the sinus any medicaments placed in the tooth.

*Thos. M. Hunter.*



## ITEMS.

The London diploma takes two or three years' apprenticeship to a dentist and two years college course to get; in all, four years by the shortest way, to myself and many men, five years.

*H. S. Moore, Eng.*

\* \* \*

The Ohio Dental Society will hold its next annual session at Neil House, Columbus, Ohio, December 4th, 5th and 6th, 1894.

*J. R. Callahan, Chairman Ex. Com.*

\* \* \*

Instead of paraffin, which scales off as soon as wet, melt together rosin and wax on a spatula, and pour on cement filling after it has stood a few minutes. After a day or two it will take a polish almost like ivory.

*E. T. Darby.*

\* \* \*

With cement in conjunction with gold or amalgam, we have a filling that offers but few objections. With a non-irritating cement and an amalgam, slightly and free from thermal and electrical changes, we can command a perfect—an ideal filling.

*S. Roush.*

\* \* \*

A two per cent aqueous solution of trichloroacetic acid to moisten the pumice is perfectly harmless. I have used it in my practice for some time, and find it far superior to tincture iodine for removing the "green stain" on children's teeth.

*W. H. Jones.*

\* \* \*

Having had eight years' experience in handling cyanide of potassium; knowing its deadly character only too well—having had a severe illness from absorption of the drug; knowing, also, that till very recently there was no known antidote, I felt constrained to caution those that might not know its character. Yes, Dr. Thompson, I have known photographers to be injured by its use.

*W. O. Robinson.*

\* \* \*

In October ITEMS you make mention of the accident I had with pyrozone, and say it was probably a 25 per cent solution. It was a 5 per cent solution, and the 3 per cent will do the same thing, as I know of one of our profession who had the same accident with the 3 per cent, and a physician just out of the city lost an eye with the 5 per cent.

I do not consider it a safe chemical in any shape, as I know the 25 per cent has exploded while standing in a glass of ice-water, and the glass was just about pulverized with the force of the explosion. The dentist had just turned his back and was a few steps away, or there would have been some serious damage.

*A. M. Markle.*

\* \* \*

In flasking let teeth set after flasking before packing with rubber eight or ten hours, to let the plaster thoroughly harden, so the sections will not give in screwing flask together after packing; or if in a hurry, place flask over alcohol lamp (one used to heat vulcanizer) for half or one hour to drive out moisture in plaster, so as to hold the teeth exactly as they were set up. Avoid using too great excess of rubber, and give plenty drainage for excess of rubber to escape.

*A. R. Browne, Columbia, La.*

\* \* \*

COPAL.—The value of copal may be estimated by its power to produce, when properly melted and incorporated with linseed oil, in true proportions and a workmanlike manner, a varnish possessing in the greatest possible degree the following properties: Close adherence to the surface of the body varnished with it, hardness, brilliancy, freedom from scaling, absence of color, greasiness, or dullness, faculty of resistance to sudden changes of temperature, and the power to impact to the varnished object the same shining appearance as if it were covered with glass.

*British Journal.*

\* \* \*

I know a woman who has five doctors, whom she consults at regular intervals. Number one, who is of most importance, looks after her general system, and is consulted when the trouble cannot be definitely located. Number two is the eye, ear, and throat specialist. Number three takes care of her skin and complexion. Number four has tackled her hemorrhoids, but has not cured them; he is the "rectologist." Number five, ah! number five, he is in the swim just now; he palpates the appendix, the ovaries and their accessories, and is ready for a laparotomy should a pain strike his territory. I know she has also been in the hands of the dentist and chiroprapist.

*Louisville Medical Monthly.*

\* \* \*

#### Pulp Devitalizing Paste.—

R.—Arsenic..... 20 grains.  
 Cocain hydrochlor..... 20 grains.  
 Menthol crystals..... 5 grains.  
 Glycerin q. s. to make a very stiff paste.

*E. C. Kirk.*

## EDITORIAL.

### NO ROOM.

No room? Well, we are a little crowded. With forty colleges sending out a young army of a thousand every year, there is a little over-production. Yet get beyond the crowd and you are all right. There is no crowding there. The people will carry you along, and give you every attention.

As I look over a college class it seems as though I can predict who will get there. At any rate, I can tell who will not get there. Yonder sits one full of fun and frolic, provoking laughter, and thus distracting attention from the lecture. A clown can do that, and always remain a clown. And that bully of a boy over there, always ready for a fight or a play, and more anxious to gain laurels at games and athletics than at study and clinics, he will not get there. That trickster who can trick his teacher, elude the quizzist, fool the demonstrator and deceive the examiners, may be a successful rogue, but will never be a successful dentist. All these may get through college, but there is no room for them in the profession. They will be crowded out, sure.

Are you a student yourself? Look around and prophesy who will succeed in professional life. In the lecture-room they may seek a corner, but it is only that they may be undisturbed by the giddy; they may seem unsocial, but it is only because they are thoughtful; they may be as modest and inquiring as a child, but it is only because they are teachable. They have heard the lecture, and can repeat it; they have understood the demonstrator, and can illustrate the demonstration; they have plenty of clinics, and are skilful in their demonstrations. These few will be the majority by and by; for put in the scales of success, each will weigh down a score of students noted for everything but a thoughtful, studious, painstaking course at college.

No room? That is so. We are beginning to have dentists as thick as saloons, and nearly as much of a nuisance. They are a stench in the profession and a disgrace in the community. Young

man, get away from them. They are corrupting. Come up higher, where you can enjoy the sweet air of purity and refinement. Here you will have plenty of room, and plenty of practice and gold.

It is in dentistry as in everything else. A man may be a menial or a master, keep a peanut stand or an emporium, be despised and neglected, or honored and crowned. There's no crowding among the latter.

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### NOTHING TO DO.

Go the world over, and you will find some who can find nothing to do, and others who are always usefully busy. And this difference is not of mere chance either, nor generally a difference of fortune or capacity. The difference is largely in the push, the vim, the intelligent energy. To have something profitable to do, we must search for it in every direction, inquire for it from every source, nose about in every corner—feel the uneasiness of a fish out of water—till we find it, then we shall have it; not at first, perhaps, that which is to our liking, but something that may lead up to it, and prepare for it. When the boy, George W. Childs, decided he would be a book merchant, he did not pine away because he could not become a full-fledged one all at once; but, with fifty cents in his pocket, and a sweet, dry crust in his hands, he went from book-store to book-store for work—any work, at any price, if only he got a foot inside the door. Of course, he found it; a mere menial service at first; but he did it so well, that he made himself useful, then indispensable, till promotion after promotion brought him to a responsible clerkship, then to a chief clerkship, and then to be the proprietor of a little stationery and second-hand book-store. By economy and intelligent industry he rose and rose till he was above the clouds, and above petty competition; first as a book merchant, then as a publisher of a small paper, and then as the maker and proprietor and editor of one of the most popular and profitable papers in the United States.

Young man, there is a place for you. Decide what place you are fitted for, and seek it. Prepare now, and just where you stand,

by doing your best with what is next to you. Do it quickly, do it well, do it with cheerfulness and intelligence, if it is only to sweep the room. Sweep and dust, and arrange it so nicely that it will make room for you to do something else, till your own merits of head and heart and skill will bring you up higher in spite of dull times, or difficulties, or opposition. Your place patiently waits for you. Will you as industriously seek it?

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How weak, and silly, and mean, and to every disadvantage, anger makes us appear. The wisest show stupidity when in anger; the shrewdest are contradictory, confused and off their guard. Even the Christian is made ashamed of himself, and may become a blasphemous reviler. The man, who, in his sober moments, is a wise master-builder of character and fortune and honor, when angry scatters precious things about as of nothing worth. He banishes pleasure, shuts his eyes to all that is lovely, and stamps on his best interests. He uses others no better than himself, for he traduces his best friends, estranges his best patrons, and makes enemies of his very lovers. What folly! His heart is filled with gall, his tongue is set on fire of hell; in spirit he is a murderer. What madness!

---

The man who thinks we have reached the acme of dental knowledge and art is mistaken. There is plenty of room for improvement. We are men beside the boys of the early days, but we are children beside those who are following us. In our own history, what we know and can do now, we shall laugh at by and by; and the books we now call standards will be effete in a few years. Who will let in the light? Who will dazzle our eyes with new thoughts and discoveries? The men, and the light, and the inventions are coming. Make room for them! Our young men are full of genius; our old men are leaving us legacies of thought. What is crude to-day will be perfected to-morrow; what seems impossible now will be plain soon. And mark you, those who do not keep step to the music will be left behind.

## LIGHT JOBS.

Some young men are all the time looking for light jobs. They seem to think hard work is not respectable—that it is only for poor people, and is not the road to fame and affluence. Foolish thought! Dreadful, ruinous, fatal imagining! Eminence comes only through hard work; for hard work alone can give discipline, experience, skill of thought, and fingers necessary to development, maturity and brawn. The indolent young man may make a good fop, a popular dandy, an exquisite dude—if he has an indulgent father or rich uncle to ruin him—but not a stalwart *man*. There must be hard work in studying and hoeing, in thoughtfulness and druggery, in problems of Euclid, and bread and butter, to produce self-sustentation and worth, independence and cash, honorable position and noble character. These are what bring dignity and manliness, respectability and eminence. All good things, great things, desirable things, have their price, and must be paid for in hard cash and hard knocks. They are not found lying around loose; they are possessed only by struggle; all the details are forging wisdom from stubborn facts, wrestling success from impassible barriers, making a highway through an impenetrable wilderness. And even then we cannot maintain ourselves without eternal vigilance and constant progress. There is no room in this world for lazy folks. They are inevitably pushed aside, or made menials of.

---

Harboring to memory does not give wisdom—only knowledge; and often only words. Therefore, bookish men may be mere parrots. At best, they are poor counselors, and worse practitioners. Knowledge is but stored seed. To produce wisdom it must be put in the warm, moist soil of the soul, and cultivated with diligence; the spirits must water it, and the passions of the heart give it life and growth. When it produces the fruitage of wisdom, as delightful as this is to look at and handle, it must be eaten and thoroughly digested to be converted into skill.

## BE A LIGHT.

Be a light. Whatever your calling, shine. Shine with a distinctive, unmistakable, individual light—not borrowed, not deceptive, not distorting—a charming, winning, cheerful light; a warm, genial, twinkling, dancing light that the most sleepy, indifferent, selfish may be attracted and won to your service.

Ah, that is the way to make your own beautiful daylight and attract your neighbors to enjoy it. They will follow you, pay you for it, and honor you for the display. It will display itself without effort, if it is really within you. Unconsciously it will perch on your features, sparkle in your eyes, blush on your lips, laugh on your tongue, and play around and above you a radiance and a bow of promise and beauty.

Get it, kindle it to a flame, throw its rays far into the darkness, and you will fulfill the mission for which you were sent into the world.

---

In the busy, distracting, perplexing and cankering, exhausting, hardening cares of business life we sometimes forget that the sum of life's happiness, after all our anxious seeking, is innocence and intimate companionship—an inner life of sweet, unalloyed fellowship, *all our own*. This is what fixes, establishes, and holds us to a continual purpose for improvement, development, and stalwart manhood, and gives us the vigor, skill, and enthusiasm necessary to its accomplishment.

He who forgets, or neglects, or mars his intimately social nature—who has not one he can love with all his heart, mind, soul, and strength, and so infatuated with that one it keeps him pure and lovely and lovable, industrious and ambitious and progressive, refined and esthetic and noble, and that rids him of all distracting and degrading habits—knows nothing of the exquisite luxury of a true life.

---

Deliberation develops thoughtfulness, caution matures prudence, and care in details brings success.

## THE OLD YEAR.

"How long the day!" cries the toiling youth. "Months are but days," responds the enthusiast. "How quickly the years go by," says the man of mature age.

Ah, the mood counts time! Slow, indeed, is its passing to the weary and heavy laden, to the prisoner and to the lonely one with hope deferred, to the languishing and the bereaved.

But whether slowly or with rapidity, another parting of Time's great divisions has come. Yesterday we hailed its birth; to-day it flies, a skeleton of age. Such is life.

If, true to the year, we have woven a royal robe befitting the celestial spheres. That skeleton, clothed with its beauty, will be reanimated with a new significance of life—at our coming.

Let us, then, value the years as they pass; for if we nobly act our part they will be wondrous revelations—when we go to meet them. Years here will be living things there—cherubs of light to greet us, and to conduct us to our Heavenly Mansion. They will be embodiments of our memory, and sit down with us as past friends and present most intimate companions. They will be there what we make them here.

Are we satisfied with our handicraft? When, by-and-by, we meet what the year has brought forth, will it smile or frown?

We are about to begin a new year. Shall it be an angel or a demon?

---

Dr. Daly in his article, "Hygiene in Prosthetic Dentistry," on another page, lays great stress on the porosity of rubber plates, as the harbinger of microbes and filth. I think he very much exaggerates this porosity. I believe rubber plates, properly prepared, make one of the best dentures known to the profession. His gold lining of these plates, however, is a great addition to its beauty, usefulness, and cleanliness. This is really the point of his paper, and commends itself to the profession.

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Many dentists would be improved by getting up and dusting.



## HINTS.

When your broach fails to take and wind cotton perfectly, draw it a time or two through a once-folded piece of fine sandpaper.

\* \* \*

There are those who never speak or write unless they have something to say, and who take such pains to say it that we easily collect the instruction. These are rarities, but oh, how we like to find them, and how we wish there were more of them!

\* \* \*

Mr. Gladstone speaks of duty as "a power which rises with us in the morning and goes to rest with us at night. It is co-extensive with the action of our intelligence; it is the shadow which cleaves to us, go where we will, and which only leaves us when we leave the light of life."

\* \* \*

The following are the officers of the Davenport City Dental Society: Dr. L. W. Skidmore, Moline, Ill., President; Dr. R. M. Pearce, Rock Island, Ill., Vice-President; Dr. H. G. Pape, Davenport, Iowa, Treasurer; Dr. E. E. Williams, Davenport, Iowa, Secretary; Drs. C. R. Baker and J. R. Kulp, members of Executive Committee.  
*E. E. Williams, Secretary.*

\* \* \*

A SIMPLE METHOD OF TRUING UP CORUNDUM WHEELS.—To true up a jointing or other corundum wheel, take a straight-edged piece of sheet-iron, of about No. 22 gage, and while the moistened wheel is revolving on the lathe, hold the straight edge of the iron against the face to be trued up. A few moments only are required to obtain a surface equal to that of a new wheel.

In my own practice I have found it still better to place the corundum wheel in hot water till somewhat soft, and then press the side most used against glass. It will be trued almost as perfectly as when new.—ED. ITEMS.

\* \* \*

Some of the best known ancient Etrurian pieces of work are in America, and they bear no more resemblance to American bridge-work than they do to dental regulating appliances. Not one of the principles on which modern bridge-work depends for its efficiency is exemplified in the ancient specimens, and so the fling at the "American idea" is quite wide of the mark.

## FOR OUR PATIENTS.

Space! What art thou? The mightiest word  
We say in haste the human tongue  
Can utter. Boundless. Consider it.  
Where, we ask, does existence end and  
Space have sole dominion? We know not.  
But though creation's work may extend  
Farther than human thought can conceive,  
Yet it must end, and space is but begun.  
Oh, mind, when life's span is all too short  
To comprehend such greatness, why dost thou  
Recall a greater and make us tremble  
When we think Eternity?

*E. S. Kirkpatrick, D.D.S.*

---

### THE VALUE OF SUGAR ON MUSCULAR WORK.

1. The periods of indigestion, as well as the kinds of food taken, have a marked influence on voluntary muscular energy.
2. Irrespective of the influence for good, there is a periodical diurnal rise and fall in the power of performing muscular work.
3. More work can be done after than before midday.
4. The minimum amount of muscular power is in the morning, about 8 o'clock; the maximum, about 4 in the afternoon.
5. Regular muscular exercise not only increases the size and power of the muscles, but has the effect of decidedly delaying the approach of fatigue.
6. The amount of work performed on a diet of sugar alone is almost equal to that obtained on a full diet; fatigue, however, setting in sooner.
7. In fasting, large quantities of sugar (500 grains) can increase the power of doing muscular work during thirty voluntary contractions from 26 to 33 per cent, while the total gain in a day's work may be 61 to 76 per cent; the time before fatigue sets in being also lengthened.
8. The effect of sugar is so great, that when added to a small meal, it can increase the muscular power during thirty contractions from 9 to 12 per cent, while the total increase in work may be from 6 to 39 per cent; the approach of fatigue being at the same time retarded.
9. When added to a large mixed meal, sugar can increase the muscular power of thirty contractions 2 to 7 per cent, the increase

in total work being 8 to 16 per cent; and a marked increase in the resistance to fatigue is shown.

10. Two hundred and fifty grams of sugar taken in addition to a full diet increases the day's work; the work accomplished during thirty voluntary muscular contractions shows a gain of from 6 to 28 per cent, the total day's work giving an increase of power 9 to 36 per cent; and the time before fatigue sets in being lengthened.

11. Sugar taken early in the evening is capable of obliterating the diurnal fall of muscular power that occurs at this time, and increases the resistance to fatigue.

*Physiology.*

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### IMPORTATION OF NATURAL TEETH.

EDITOR ITEMS:—I am in receipt of a circular from an importer of English artificial teeth, in which the statement occurs that these teeth (the English) are not exempt from duty, but that the tariff bill specifies as exempt only "natural teeth, unmanufactured."

I am writing for information. Will you kindly inform me just what "natural unmanufactured" teeth are? Is it that I am to understand that those of my patients who visit Europe, Canada, or Mexico are privileged to bring their natural teeth back with them free of duty? Or is it that the dreaded custom-house officials inspect the mouths of travelers and levy tribute on artificial teeth? Or is it that the makers of the tariff bill were under the impression that seems to obtain among some ignorant people that human teeth are still used as substitutes for natural?

Possibly, it may mean that teeth grafted in after the fashion of Dr. Younger are subject to tax. But, of course, to an imaginative person like myself a vast conjectural field is open. Surely the editor of a dental journal can tell what is meant by "natural teeth, unmanufactured." Can you? *J. B. Hodgkins.*

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William F. Giddings, D.D.S., ex-President and present Treasurer of the Washington State Dental Society, committed suicide in his office, between the hours of two and four o'clock, Sunday morning last, by blowing his brains out with a shot-gun. The cause of the deed was attributed to insanity, as the doctor was wealthy and had a lovely home. He was a leader in his profession and a polished gentleman, and his loss will be felt by the profession as well as a host of friends. *R. B. Gentle, D.D.S.*

IN CHICAGO.—“Do you give gas here?” asked a wild-looking man who rushed into a dentist’s office on Clark street yesterday morning.

“We do,” replied the dentist.

“Does it put a fellow to sleep?”

“It does.”

“Sound asleep, so you can’t wake him up?”

“Yes.”

“You could break his jaw or gouge out his eye and he wouldn’t feel it?”

“He would know nothing of it?”

“How long does it make him stay asleep?”

“The physical insensibility produced by inhaling the gas lasts a minute or a little less.”

“I guess that’s long enough. Got it all ready for a feller to take?”

“Yes. Take a seat in this chair and show me your tooth.”

“Tooth nothin’!” said the excited caller, beginning rapidly to remove his coat and vest; “I want you to pull a porous plaster off my back.”

*Chicago Tribune.*

HOW TO REST.—To understand the way to rest is of more importance than to know how to work. The latter can be learned easily; the former it takes years to learn, and some people never learn the art of resting. It is simply a change of scenes and activities. Loafing may not be resting. Sleeping is not always resting. Sitting down for days with nothing to do is not restful. A change is needed to bring into play a different set of faculties and to turn the life into a new channel. The man who works hard finds his best rest in playing hard. The man who is burdened with care finds relief in something that is active, yet free from responsibility. Above all, keep good-natured and don’t abuse your best friend, the stomach.

*Ohio Dental Journal.*

TOO FAR FETCHED.—Two things are always interesting, the old and the new. This time we would bring under notice some cases of ancient mechanical work, which were detailed to the Rome Congress by V. Guerini, of Naples. They follow more on the lines of what is now-a-days called bridge-work, and seeing that it dates back some two or three thousand years, is just a little bit awkward for those to explain who look on the above specialty as “something quite new and quite an American idea.”

*The London Dental Record.*

## THE WILMINGTON DENTAL M'F'G CO.,

1413 Filbert Street, Philadelphia, Pa.

Inclosed find \$1.00 (for United States, Mexico and Canada or \$1.50 for all other countries), for which please send me the **Items of Interest** for the year ending with the December number, 1895, postage prepaid.

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State.....

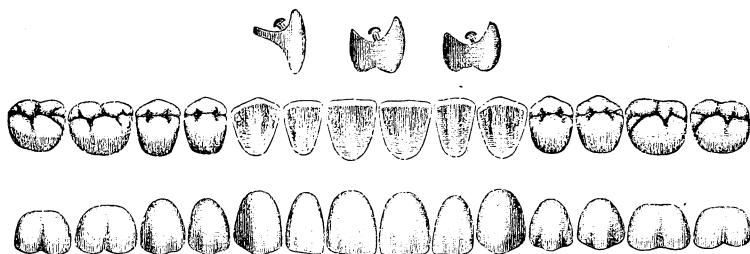
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GREAT BRITAIN, 6s. 6d.  
GERMANY, Mks. 6.80.  
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# CRESCENT TEETH.

Patented by Dr. E. A. FLOYD, in the United States, June 19th, 1888;  
Canada, May 7th, 1889; Great Britain, June 4th, 1889.



In describing the advantages of the above teeth we have only to say that the inventor has used them almost exclusively for the last four years. He has found them to surpass any other form of tooth in the following points :

1. They present the natural shape and size of the tooth on the lingual surface, and are, consequently, more pleasant to the tongue.

2. They are made to set over the center of the alveolus. This position gives a more direct and equable pressure in eating than other forms of teeth.

3. In cases where the gum protrudes, making it impossible to insert gum teeth, these teeth can be easily and elegantly adapted to the case by setting them far back or under the ridge.

4. The pins of the teeth being set in the deep groove or bottom of the tooth, vibration or change of position is impossible when the person wearing them is eating.

5. The perfect fit and adaptation of these teeth to the plate, render it almost impossible to accumulate anything under the teeth.

6. In articulating, or in adjusting a set of these teeth, the use of the grindstone is almost wholly unnecessary.

7. The bicusps and molars all being "short bite," they can be used where a "long bite" tooth will not be at all available.

8. Before swaging, see that the pins are perfectly clean and perfectly set in each tooth.

9. As these teeth are open on the sides, a continuous mass or ridge of the plate material is so formed as to produce great and unusual strength at this point of attachment to the plate.

10. Should a tooth get broken from the plate, a new tooth can be replaced in a few minutes, without even marring the polished plate, by simply removing the broken tooth and boring a beveled hole from the inside of the plate down to the tooth; then insert a tooth of the proper form, size and color, and set the tooth in cement or amalgam.

11. These teeth are so constructed that they can bear a great heat, and can be used most advantageously in any case requiring an artificial tooth.

12. These teeth mounted on any of the rubbers, gold aluminum or platinum, with pink rubber gums, make a strong and beautiful piece of work.

13. Actual test of the Crescent Tooth has proved most satisfactory to the inventor, who has practiced dentistry for thirty-six years, and his patients, and those who have used them; they are put upon the market with confidence in their integrity and practicability.

# SPECIAL DIRECTIONS

TO BE

## Used in Mounting Crescent Teeth.

When packing the Pink Rubber for the facings be careful to avoid letting the heads of the pins become imbedded (in Pink Rubber) as it lacks the strength of the other rubbers, in some cases teeth have loosened and pulled out of the plate where the pins were held by it.

In all cases be sure to pack around the pins the same rubber which is used for the palatine plates. In making a set of Crescent Teeth, don't cut out the rubber between the teeth, but leave it full, so as to look like the natural gums, and give strength in retaining the teeth in the plate.

Dentists are apt to let the six anterior teeth "strike" in articulating a set of artificial teeth, this should be avoided in all cases.

When the Crescent Teeth were first put on the market the pins were rather small; the pins are now treble in size and straight, making one of the strongest on the market. Many new moulds have been added, and the teeth can now be furnished of almost any size, shape or shade.

## PRICES OF CRESCENT TEETH.

Less than \$10.00 lots, per tooth .....	12½ cents.
In \$10.00 lots, per tooth .....	12 "
" 25.00 " " " .....	11½ "
" 50.00 " " " .....	11 "
" 100.00 " " " .....	10 "

THE WILMINGTON DENTAL M'F'G CO.,

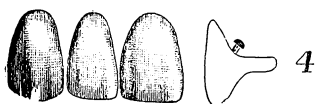
Philadelphia, New York, Chicago, Washington, Wilmington.



# CRESCENT TEETH,

## IN SETS OF 14's.

### UPPER.

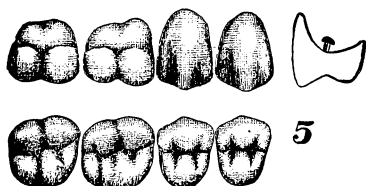
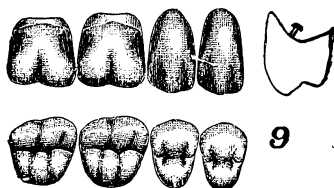
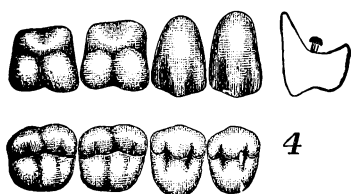
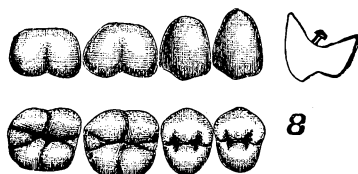
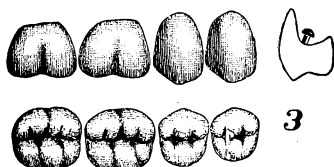
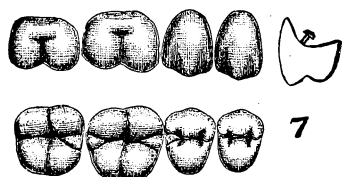
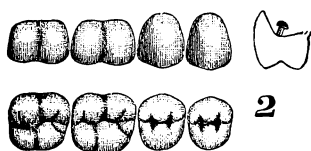
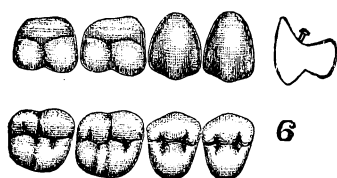
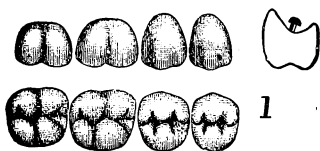


### LOWER.



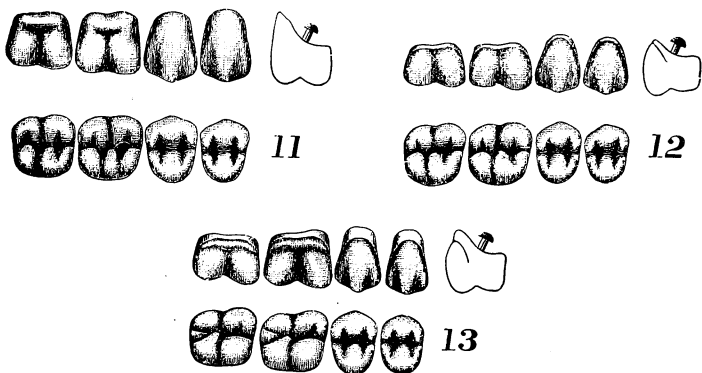
# CRESCENT TEETH, BICUSPIDS AND MOLARS, IN SETS OF 8's.

UPPER.

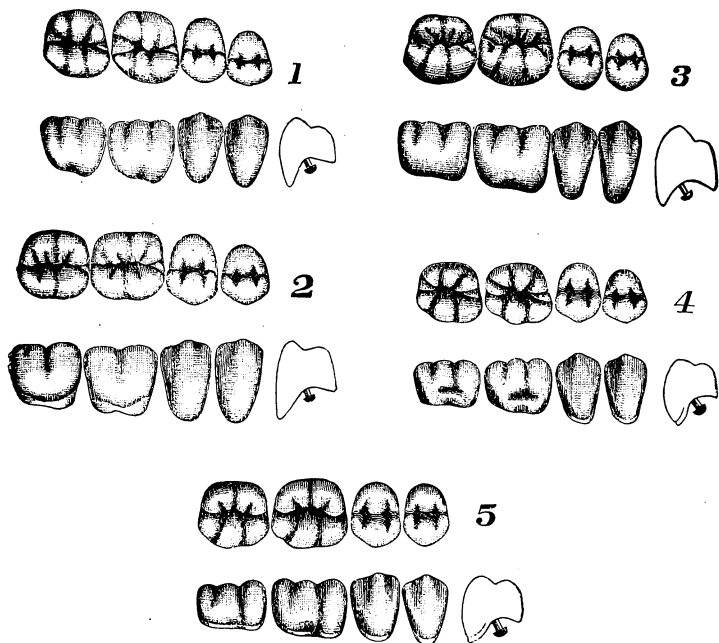


# CRESCENT TEETH, BICUSPIDS AND MOLARS IN SETS OF 8's

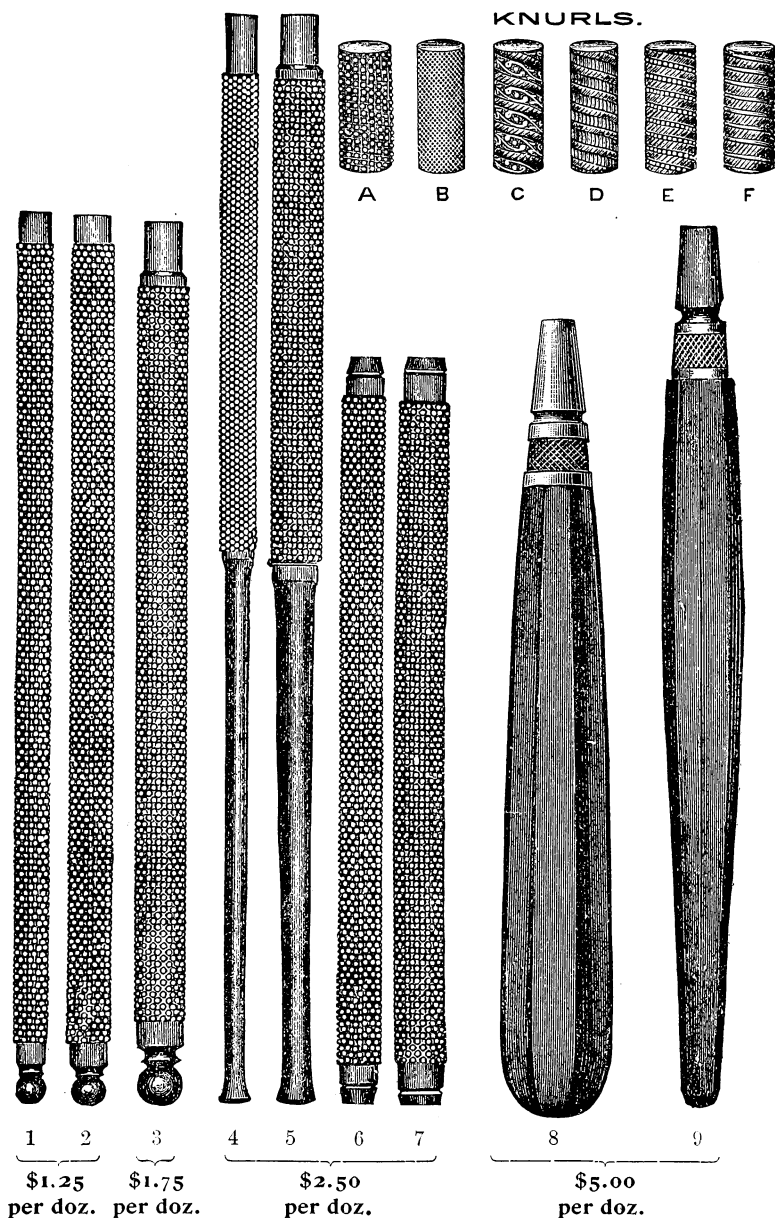
UPPER.



LOWER.

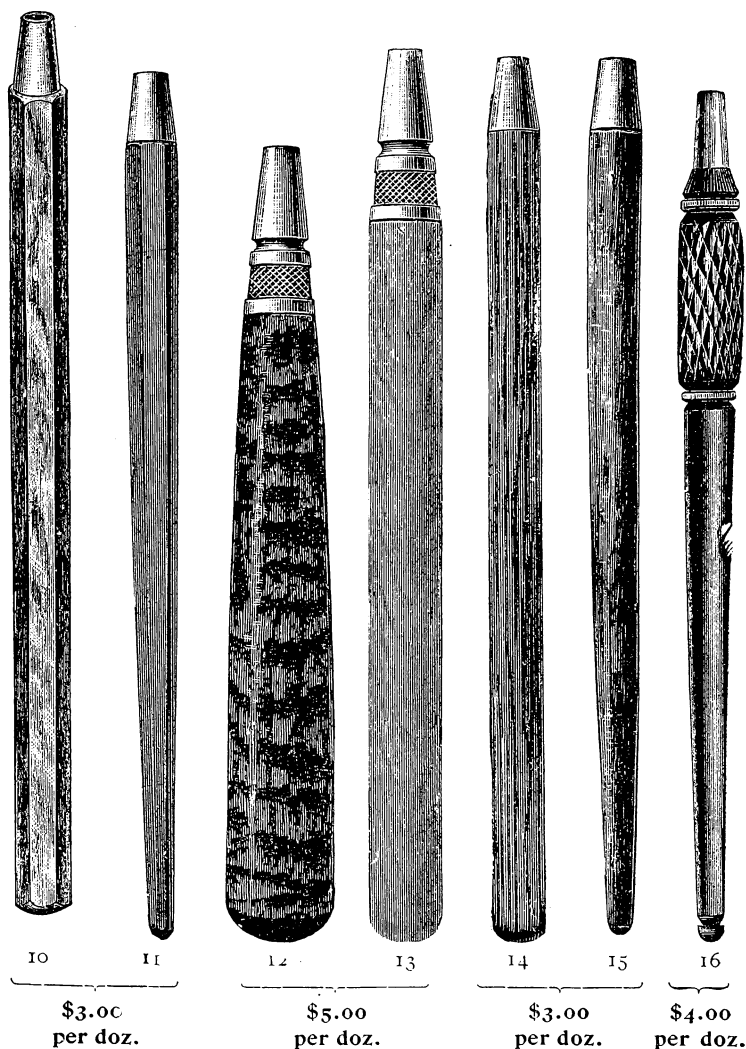


# SOCKET=HANDLES.



In ordering Handles Nos. 1 to 7 inclusive, state, by letter, which knurl is desired.

# SOCKET-HANDLES.



Socket-Handles, Nos. 1 to 7, are made of steel and heavily nickel-plated. Nos. 8 to 15 are made of the beautiful hard woods,

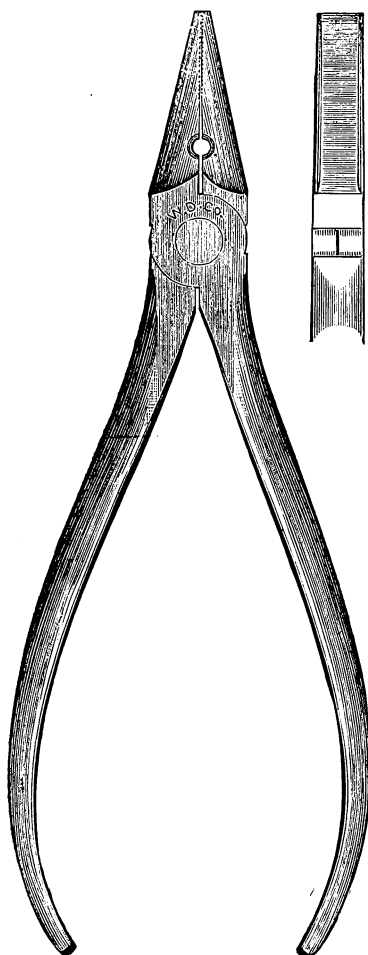
**SLAKEWOOD, OLIVE, TULIP, COCABOLA, EBONY, ROSE-WOOD.**

These we selected for their distinctive colors and fine grain. No. 16 is only made of ebony. With the selection of woods offered, it is possible to have forty-nine wood handles, no two alike. This is quite an advantage to many.

# DUPLEX HANDLES

are made to take the Snow & Lewis and Socket Plugger Points, and are made the same styles as Nos. 3, 4, 5, 8, 9, 12 and 13 of Socket Handles. Nos. 8, 9, 12 and 13 are furnished in the same variety of hard woods as the Socket Handles.

PRICES:				Per Doz.	Each.
No. 3, any Knurl,	-	-	-	\$2.25	19 cents.
Nos. 4, 5, any Knurl,	-	-	-	3.00	25 "
" 8, 9, 12, 13, -	-	-	-	5.50	46 "



## Handles for Automatic Plugger Points

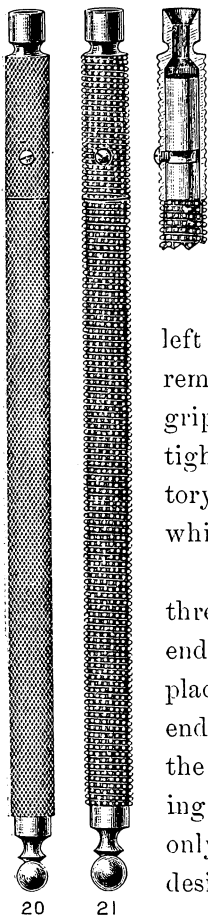
are made according to same numbers as the Duplex Handles, and of the same varieties of woods, and for those who desire to use their automatic points as hand instruments, these handles will prove very satisfactory.

PRICES:				Per Doz.	Each.
No. 3, any Knurl,	-	-	-	\$1.75	15 cents.
Nos. 4, 5, any Knurl,	-	-	-	2.50	21 "
" 8, 9, 12, 13, -	-	-	-	5.00	24 "

## Pliers No. 28 for Cone-socket Instruments.

No. 28 Pliers are made entirely of forged and tempered steel, insuring durability. The jaws are milled instead of being file-cut, and will not wear smooth. There is a hole drilled in the jaw, so as to grasp the instrument without injuring it.

Price, No. 28, Nickel-plated, - - - per pair, 90 cents.



# Improved Socket Handle.

PATENT APPLIED FOR.

Socket Handles, as originally made, have given reasonable cause for complaint in many cases, due to the liability of the instrument to turn in its socket; especially is this so, when they have been used with right and left excavators, burnishers, etc.; and the only remedy has been the use of pliers adapted to gripping the point firmly and screwing the point tightly into its place. This is quite unsatisfactory, and we have remedied it in the new Handles which we illustrate.

It will be seen by the sectional view, that the threaded end of the point screws into the main end of the Handle, and is drawn firmly to its place by grasping with one hand the casing on the end, and turning the lower end of the handle to the right. The point is easily removed by reversing this operation. At present we can furnish only two sizes, Nos. 20 and 21, of any knurl desired.

Price,        =        each, 25 Cents.

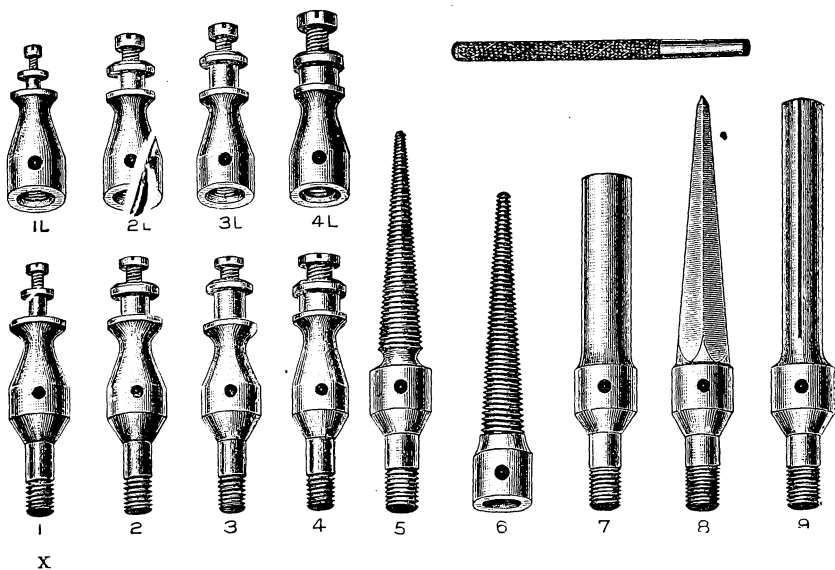
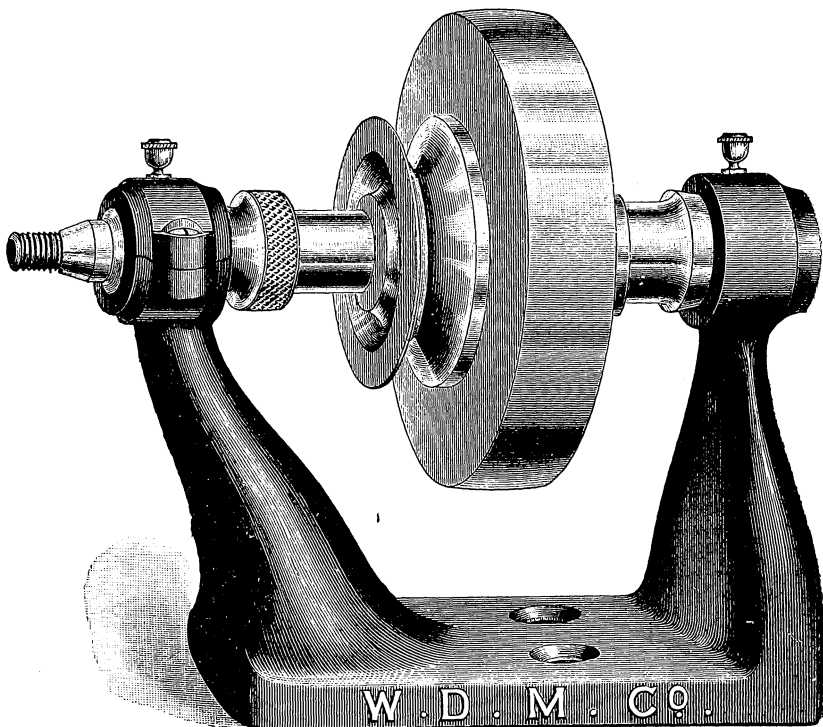
## INSTRUMENT PAMPHLET.

We have lately issued an instrument pamphlet, finely illustrated, showing our large line of long handled, cone-socket, and instruments for automatic mallets. In many instances there have been great reductions of prices. We will be pleased to forward the pamphlet to those who may desire it.

THE WILMINGTON DENTAL M'F'G CO.

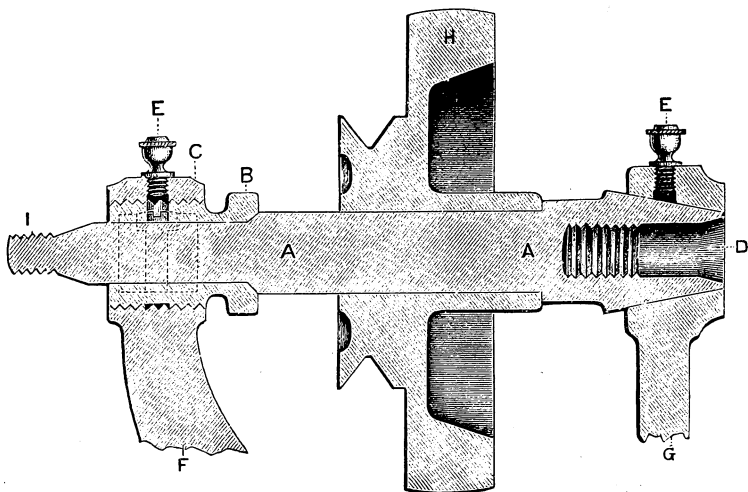
# No. 8. LATHE HEAD.

With Self-Centering Chucks. Cone Bearings.





# No. 8 Lathe Head.



**THIS LATHE HEAD** has the same frame, bearings and pulley as our celebrated No. 6, but differs very materially from it or any other lathe on the market in having a spindle and chucks which are superior to all.

From a careful study of lathe spindles in which interchangeable chucks are used, we were led to the conclusion that those in which the chucks were secured in the spindle by a thread and a cone of sixty degrees were the most durable and retained their accuracy for a much longer period than the average. We have, therefore, adopted this form of construction, and offer this lathe to the profession with the assurance that the chucks will remain true, and will not jar loose under ordinary conditions.

The sectional illustration shows the construction of the working parts. The spindle A is of steel, and its right end D is bored out to receive the chucks. The bore is threaded at the inner end, and enlarged at the outer end in the form of a sixty-degree cone, which increases the bearing for the chucks and at the same time secures them positively in the center. The left end of the spindle at I is practically the same as the end D, except that the thread and cone are reversed and somewhat smaller. The pulley H is of cast-iron, and is forced on the spindle A. Its smaller diameter is grooved for the driving belt, and its larger diameter is in the form of a balance-wheel, which insures increased steadiness while running. The bearing B is of bronze, and is threaded and held in place by the cap C, which is secured by a screw on each side of the center of the spindle into the standard F. By loosening these screws, the bearing B can be adjusted to take up any wear that may occur in it or the spindle A. E, E are caps screwed into the oil-holes, and, except for the purpose of oiling, they should be kept in place at all times, as they prevent much of the wear in the bearings due to the particles of grit collecting from wheels, etc.

Chucks Nos. 1, 2, 3, 4 are for the different sizes of corundum wheels, and will be furnished for either the right or left side of lathe.

Chuck No. 5 will carry brush and felt wheels, cones, etc., on right side of lathe.

" " 6, same as No. 5, but for left side.

" " 7 will carry lathe burs.

" " 8 is for reaming.

" " 9 is for carrying sandpaper, etc.

## PRICES :

Lathe, complete, with 9 Chucks.....	\$8.50
" " without Chucks.....	6.50
Chucks, each.....	.25

# DR. C. E. WADE'S

## Combined Scoop and Sifter.

(PATENT APPLIED FOR.)

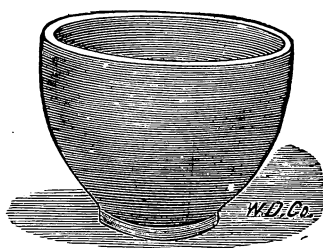


The illustration well explains this handy laboratory article, which is undoubtedly an improvement over the ordinary methods of handling plaster, Teague's compound, and other materials of like nature. It is in form like an ordinary scoop, but there is added a lid with thumb lift attached; in the interior there are three sets of wires, termed "breakers," placed for the purpose of allowing the plaster to fall as much broken as possible upon the sieve, which finally allows it to drop into the water in a fine shower, resulting in a fine, smooth, compact cast, in which there are no air bubbles or lumps. Dr. Wade suggests that the scoop be held in the right hand, the

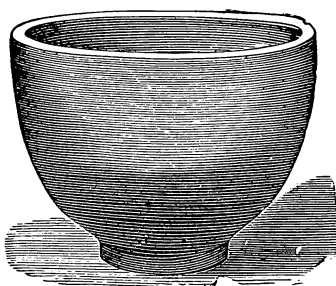
thumb controlling the lid; when sufficient plaster is scooped up, hold the lid firmly closed by the thumb, and shake *up and down* over a vessel containing water; pour off the surplus water, and you will have a most perfect mixture.

Price, postage prepaid.....40 cents.

## RUBBER BOWLS FOR MIXING PLASTER.



No. 1.



No. 2.

These Bowls are made of soft rubber, about one-eighth inch thick. They cannot be broken, the sides can be pressed together so as to form a lip or spout for pouring out soft plaster; the plaster that remains and becomes set can be thoroughly crushed and removed by squeezing the sides. No. 1 is  $2\frac{1}{2}$  inches deep and  $4\frac{1}{2}$  inches in diameter. No. 2 is  $3\frac{3}{8}$  inches deep and  $4\frac{1}{2}$  inches in diameter.

### PRICES.

No. 1.....60 cents.  
No. 2.....80 "

# WAX PREPARATIONS.

## BASE-PLATE WAXES.

### FOWLER'S PINK WAX.

The color is preferred by many as being much neater looking. We are able to furnish a Pink Wax that is as tough and reliable as our Yellow Wax. We also have it cut to pattern for upper and lower plates. In many respects this is quite a saving of wax.

Price.....Per lb., \$1.00  
" cut to pattern....." 1.25

### FOWLER'S YELLOW WAX.

A very tough, pure article, and unsurpassed by any; it is perfection for trial plates.

Price.....Per lb., \$1.00  
" cut to pattern....." 1.20

### GUTTA-PERCHA AND WAX.

This is prepared same as our Yellow Wax, with a certain percentage of gutta-percha added, making it unusually tough.

Price.....Per lb., \$1.00

### PINK PARAFFIN AND WAX.

An excellent combination. It is not brittle and is easily manipulated.

Price.....Per lb., \$1.00

## IMPRESSION WAXES.

### GUTTA-PERCHA AND WAX.

Price.....Per lb., \$1.00

### PINK PARAFFIN AND WAX.

Price.....Per lb., \$1.00

### YELLOW WAX.

Pure wax, unadulterated.

Price.....Per lb., 76 cents.

## WAX IN STICK FORM.

### FOWLER'S STICKY WAX.

For putting impressions together, mending plaster casts, sticking teeth to the plate, especially in metal work; mending rubber-dam, sticking it to the tooth or gum, for attaching the porcelain to the gold in crown- and bridge-work, etc., etc.

Price.....Per box, 50 cents.

### PINK PARAFFIN AND WAX.

Price.....Per lb., \$1.00

### YELLOW WAX.

Price.....Per lb., \$1.00

THE WILMINGTON DENTAL M'FG CO.,

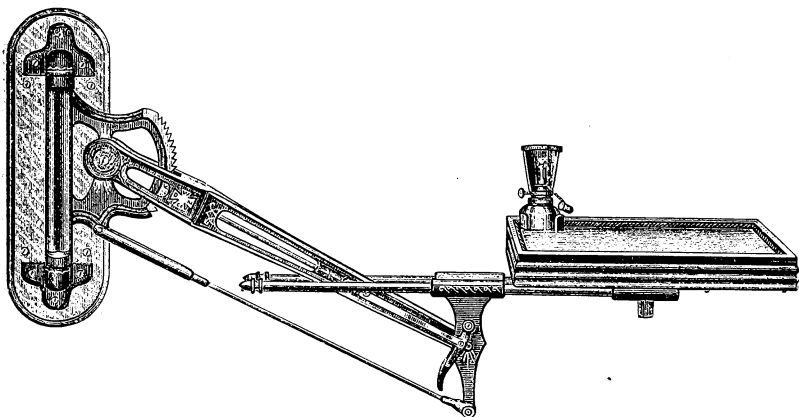
PHILADELPHIA,

NEW YORK,

CHICAGO,

WASHINGTON.

# THE WILMINGTON BRACKET, No. 1

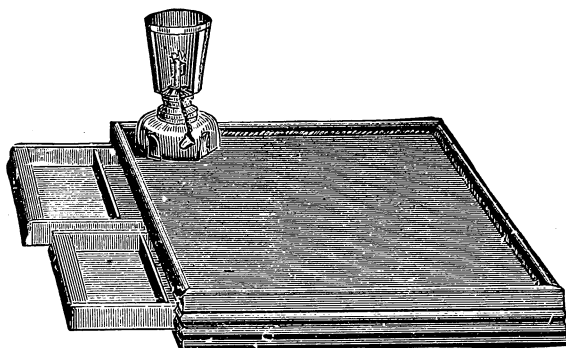


THIS bracket is designed to combine strength, beauty and adaptability. That we have succeeded is the verdict of all who have seen it. The castings are of malleable iron, the rods of steel and brass. Raising or lowering is accomplished with one hand by compressing the trigger, the bracket is firmly held in place by the four teeth on the catch. To slide the table in, or pull it out, grasp the casting under the table, and slightly raise same when pushing or pulling. The table is carried on a turn-table, giving it stability, and the horizontal range of twelve inches is due to the sliding parallel bars. The extreme limit of the swing from the wall is forty-six inches. The finish is handsome ; japanned, and ornamented with the steel and brass parts heavily nickel-plated. The tables are made in the best possible manner for beauty and durability, and can be relied upon. We can furnish the tables made of either mahogany or walnut. An alcohol lamp, stand and frame-shield furnished with each one.

## PRICES.

<b>Bracket with Plain Table.....</b>	<b>\$12.00</b>
“ “ <b>Allan “ plain sides.....</b>	<b>15.00</b>
“ “ “ “ <b>glass “ .....</b>	<b>18.00</b>

# PLAIN BRACKET TABLE, No. 1.

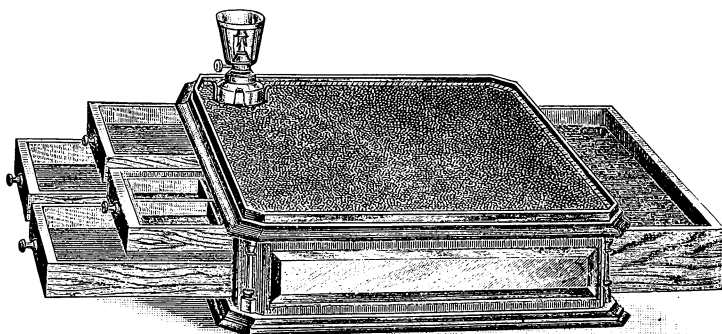


WE offer you a Bracket Table that is a first-class sample of the cabinet-maker's art, and can recommend it as being unsurpassed.

This table measures  $12\frac{1}{2}$  inches square and  $1\frac{3}{4}$  inches high, outside. The top consists of a center panel of poplar,  $\frac{7}{8}$  inch thick, tongued on its four sides; these tongues fit into corresponding grooves in the solid walnut edges of the top, which are  $\frac{7}{8}$  inch wide. The center panel is not glued to the edges, but fits with sufficient allowance for any shrinkage or swelling, and is securely enclosed by the edges mentioned, which are glued and keyed together. The sides are of solid walnut, with mitered ends. The center piece between the two drawers is of poplar, faced with walnut. The drawers are of mahogany, with solid walnut fronts and properly partitioned. They can be used from either side of the table, and are prevented from falling out by a sliding catch. The bottom is of one solid piece of walnut,  $\frac{3}{8}$  inch thick, and is oil finished inside and outside, to prevent any possibility of warping. The whole table is made of thoroughly seasoned wood, and is strongly glued together, the bottom being further strengthened by screws. We cover the top with either leather or a fine quality of maroon colored cloth, edged with silk cord, glued on close to the inside of the molding. The wood-work is highly finished, and the table, complete, is neat and durable. Each table is furnished with an alcohol lamp, flame shield and stand. Tables can be furnished made of either mahogany or walnut.

Price, Leather or Cloth Covered..... \$5.00.

# THE ALLAN BRACKET TABLES.



WE have added this handsome and practical Bracket Table to our list of furniture. It is made under our personal supervision, and will be found first-class and durable in every respect. It is  $13\frac{7}{8}$  inches square by  $3\frac{1}{2}$  inches deep; contains five drawers, as illustrated; one is  $3\frac{1}{2}$  inches long,  $11\frac{1}{2}$  inches wide,  $2\frac{1}{4}$  inches deep, with spaces to contain 124 engine instruments. The other drawers are in the opposite end of the table. The two upper ones are  $7\frac{1}{2}$  inches long, 5 inches wide,  $\frac{3}{4}$  inch deep, with lined bottoms, and with movable partition in one. The two lower ones are same length and width, but  $\frac{1}{2}$  inch deep, and without lining or partitions.

The details of construction are from the best designs, being of such a character as to place them far above the ordinary cheap table. Made upon the same general principles of our Plain Table, using only well-seasoned wood, so as to prevent any possibility of warping, cracking or shrinking. These tables are handsomely finished, and an ornament to any office. In the glass side table, only the best beveled glass is used. Tops are covered with fine cloth. An alcohol lamp, stand and flame-shield furnished with each table. We carry in stock tables made of mahogany or walnut.

PRICES: { No. 2, Allan Table, Plain Sides..... \$9.00  
 " 3, " " Glass " ..... 12.00

## The Wilmington Dental M'fg Co.,

PHILADELPHIA, NEW YORK, CHICAGO, WASHINGTON.

# SPITTOONS.



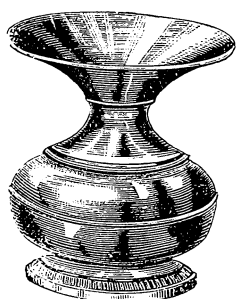
No. 1.

OUR SPITTOONS are made of spun brass and heavily nickel-plated. The seams are all soldered, making them much tighter than many of other makes that are only seamed.

No. 1 Spittoon is now furnished with a gold-catcher in addition to the cap.

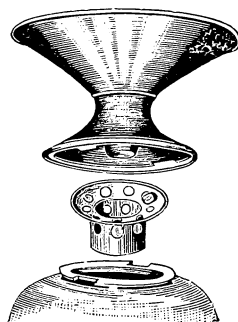


Cap for No. 1.



No. 2.

No. 2 Spittoon opens at base of the neck, allowing the gold-catcher to be readily taken out and the Spittoon cleaned.



No. 2 (Open).

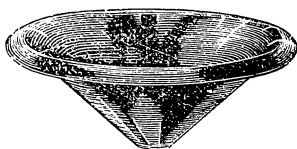
## PRICES.

No. 1 Spittoon, with Cap and Gold catcher.....	\$1.50
" 2 " " Gold catcher.....	3.00

## GLASS SPITTOON FUNNELS.



No. 1.



No. 2.

THESE FUNNELS are made of claret-colored glass. Cut 1 shows a beveled-edge Funnel, and is made in two sizes—7½ and 8 inches in diameter—and is for use in nickel-plated Spittoons. Cut No. 2 shows a rolling-edge Funnel, and is made 7, 8, 9, 10, 11 and 12 inches in diameter, for use in long-necked and old style Spittoons.

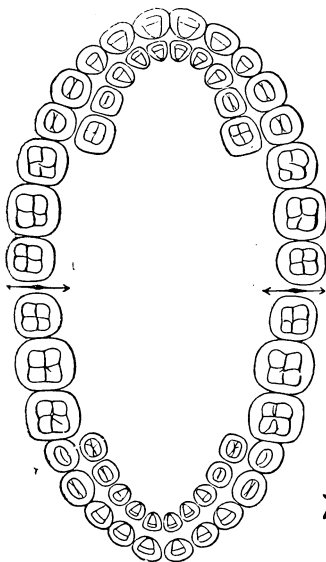
## PRICES.

Funnels (see Cut No. 1), 7½ or 8 inches.....each,	75 cents.
" ( " " 2), 7 inches.....	" 75 "
" ( " " 2), 8, 9, 10, 11 and 12 in.....per lb.,	50 "

REDUCTION IN PRICES. 

## DENTAL CUTS.

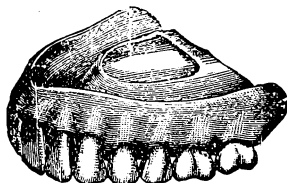
THESE CUTS ARE ELECTROTYPES, TYPE HIGH, AND READY TO PRINT FROM.



No. 1, 35 cents.



No. 7, 30 cts.



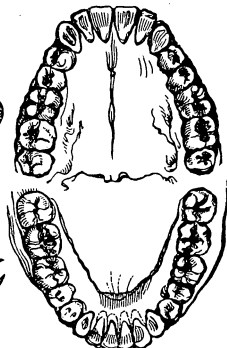
No. 5, 50 cents.



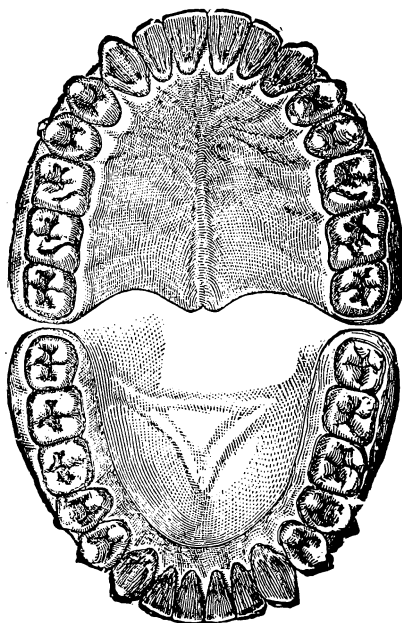
No. 6, 40 cents.



No. 3, 30 cents.

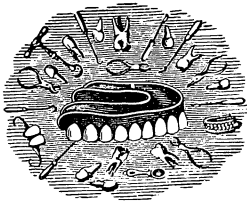


No. 8, 30 cents.



No. 9, \$1.00.

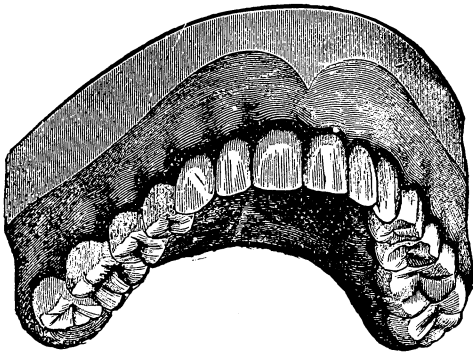




Price, No. 11, 50 cents.



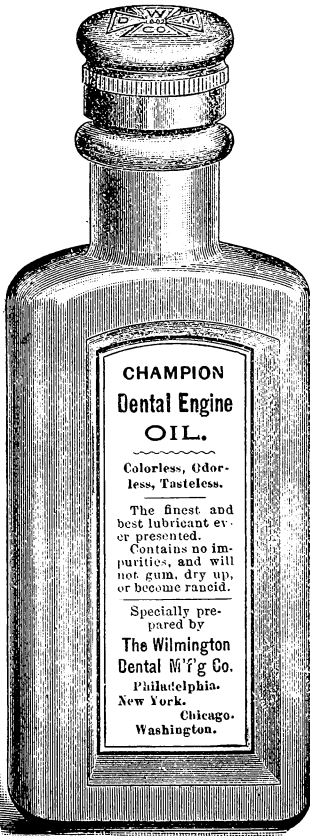
Price, No. 15, 40 cents.



Price, No. 16, 75 cents.

Cut No. 15 represents a piece of bridge-work ready for insertion, and Cut No. 16 is the mouth restored by bridge-work.

## CHAMPION DENTAL ENGINE OIL.



For some years past we have been selling this CHAMPION OIL, and our increased sales and the favorable comments from those who are using it, show that we have produced what is most essential: a perfect oil for light machinery, such as is used by the dental practitioner. We can confidently recommend it to be all the label claims for it.

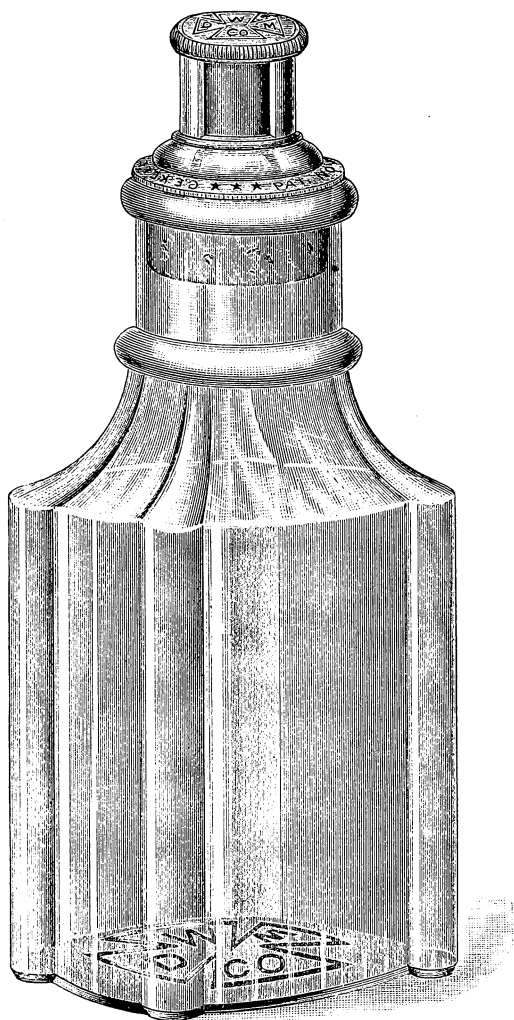
We are now placing this oil in style of bottle illustrated herewith. Our name is blown into the back of the bottle. Instead of a cork stopper we use a metal cap with cork washer, tightly sealing it.

**Price, per bottle, 25 cents.**

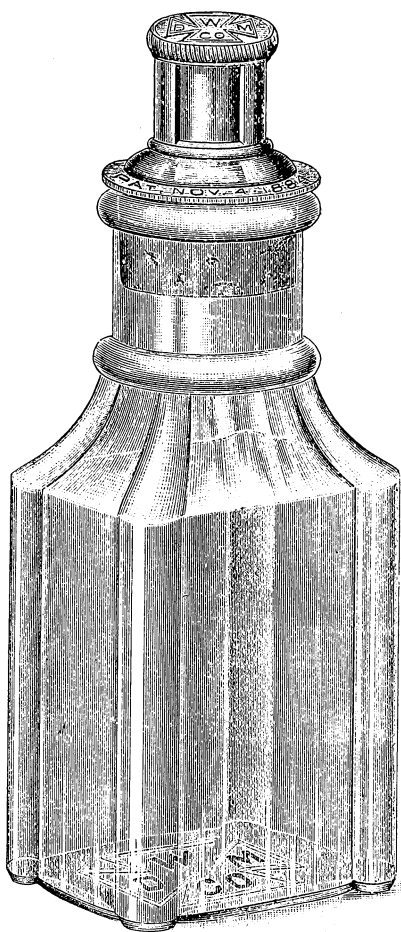
# TOOTH POWDER BOTTLES

WITH KELLS' SPRINKLER TOP.

Patented Nov. 4th, 1884.



No. 1.



No. 2.

These bottles are of handsome design and made of best flint glass. Illustrations show full size, also the Kells' Sprinkler Top. This Top gives a large and easy outlet for the powder, without the liability of wasting more than you use.

## PRICES.

No. 1. Per gross, \$14.50; per  $\frac{1}{2}$  gross, \$7.75; per doz., \$1.50; each, 15c.  
 No. 2. " 12.00; "  $\frac{1}{2}$  " 6.50; " 1.25; " 12c.

XX

# WOOD TOOTH-POWDER BOXES

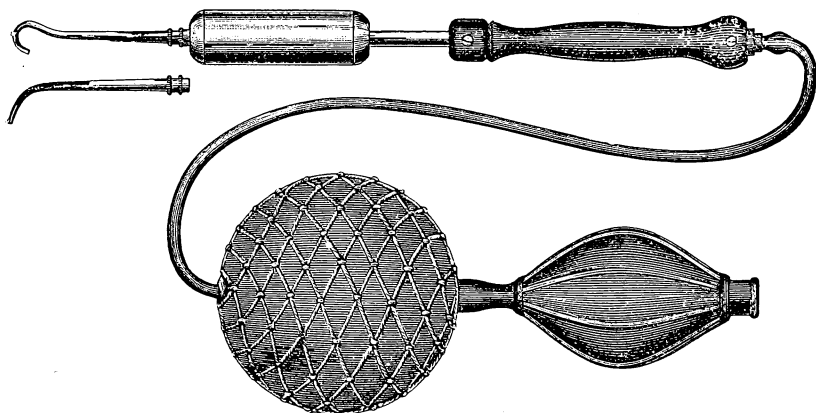
Made of boxwood, varnished, labeled with a fancy label, "Tooth-powder," without name or address.

No. 1.	2 $\frac{1}{8}$ in. diam.,	1 $\frac{1}{4}$ in. deep,	per doz.,	45 cts.,	per gross,	\$4.75
No. 2.	2 $\frac{1}{4}$ " " "	1 $\frac{1}{4}$ " " "	" " "	50 " "	" "	5.25
No. 3.	2 $\frac{1}{2}$ " " "	1 $\frac{1}{4}$ " " "	" " "	60 " "	" "	6.30
No. 4.	2 $\frac{3}{4}$ " " "	1 $\frac{1}{4}$ " " "	" " "	70 " "	" "	7.35

## HOT-AIR SYRINGE, No. 5.

Devised by W. Irving Thayer, M.D., D.D.S.

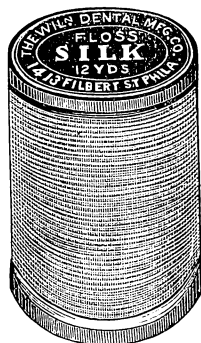
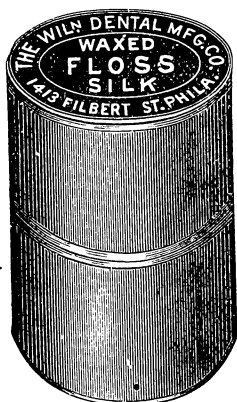
Patent applied for.



This, our latest production in Syringes, has met with immediate approval on account of its simplicity and efficiency. The Syringe is well illustrated, and needs explanation only as to the warm-air chamber; this is filled with a roll of aluminum plate, aluminum being one of the very best conductors of heat; by heating this chamber over a Bunsen burner for a few minutes, it will be sufficiently heated to supply a current of warm or hot air, for ten or fifteen minutes. A continuous, not an intermittent, blast is given by the use of the double bulb. In the drying of cavities, or for use in the treatment of diseased or sensitive teeth, it will be found invaluable. We furnish two points, the one for posterior cavities being especially useful. Length of Syringe, eleven inches. The ebony handle is so placed that there is no danger of burning the hand.

Price, complete as illustrated.....\$4.00.

## DENTAL FLOSS SILK.



Our Floss Silk both Plain and Waxed is made expressly for our sales, and is guaranteed to be of full length and best quality of silk. Our increasing sales speak of its well-merited popularity. Our rates are lower in consequence of our large purchases, which allow us to give the purchaser the benefit of a reduction.

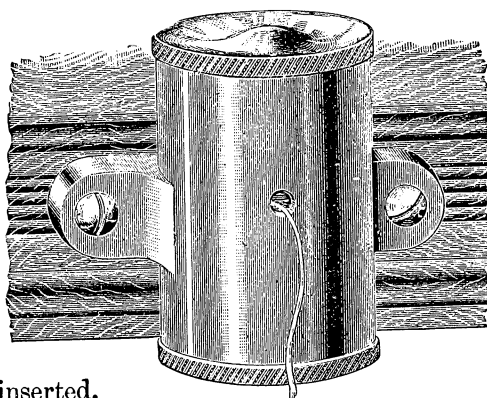
Our Waxed Floss is put on 12- and 24-yard spools, neatly enclosed in round boxes for convenience and cleanliness.

Our Plain Floss is put up on 12-yard spools.

	Per half gross.	Per dozen.	Per spool.
Price, Plain.....	\$3 75	\$0.75	\$0.10
“ Waxed, 24-yard Spools..	9.50	2.00	.20
“ “ 12- “ “ ..	6.00	1.25	.12

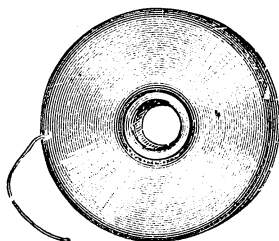
## FLOSS SILK HOLDER.

This Holder is made of brass, finely finished and nickel-plated. It is designed to be attached to the bracket table, making it convenient for use and keeping the silk in good order and free from dirt. The top is screwed on and the spool of silk is easily inserted.



Price.....75 cents

## FLOSS SILK CARRIER, No. 1.



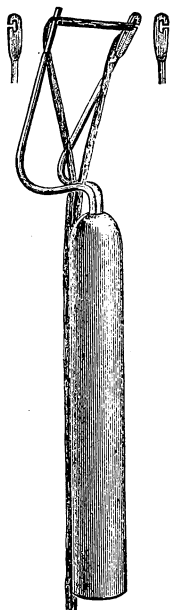
**A** NECESSITY for those who use Floss Silk. It is easily carried in the pocket, and keeps the silk clean. Made of steel, heavily nickel-plated, and will hold six yards of floss silk.

### PRICES.

Each .....	\$0.15
For one dozen .....	1.50
“ three dozen .....	4.00

## FLOSS SILK CARRIER, No. 2.

Patented October 15, 1889.



**M**ADE of spring steel, heavily nickel-plated, and set into a neat ebony handle. Convenient for use at the chair or to give your patients. It is very effective in cleansing between the teeth, as its shape is adapted for use in the mouth.

The floss silk is easily adjusted in the eyelet holes, and held taut by the pressure of the thumb against the handle. A rubber band can also be used by catching in eyelet and stretching over the band of the carrier.

### PRICES.

Per dozen .....	\$1.50
Each .....	.15
Per dozen, on Ebonized Handle, as illustrated .....	1.00
Each .....	.10

## COLORLED LIGATURE SILK.

**W**ILL be found very convenient when it is necessary to use a number of ligatures in the mouth, the different colors preventing confusion in the adjustment or removal of them. Put up on spools of eighteen yards each, and colored Blue, Gold, Pink, Purple and White.

### PRICES.

Per dozen .....	\$1.50
“ spool .....	.13

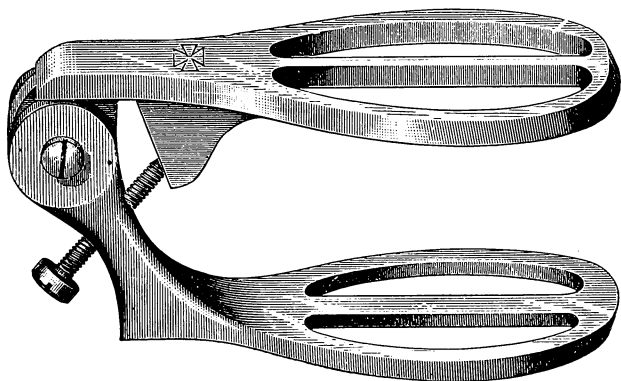
## GILLING TWINE.

**F**OR ligatures for correcting irregularities and holding rubber-dam in position; also used for cleaning between the teeth. Put up twenty-four inches in length, plaited. Three thicknesses—fine, medium, and coarse.

### PRICES.

Per plait .....	\$ .08
“ half-pound ball .....	1.00

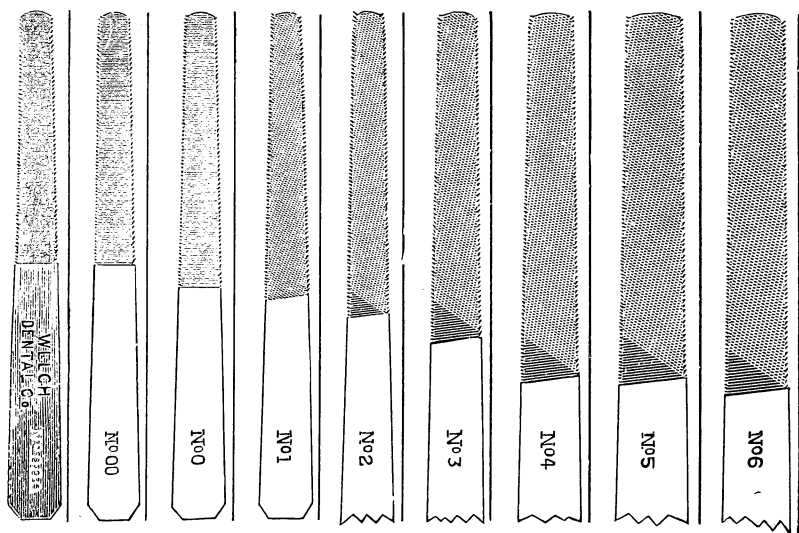
# CROWN ARTICULATOR.



In crown or bridge-work when only a few teeth are involved, this little Articulator will be found quite necessary. We have added a set-screw for regulating the bite; this will be found quite an improvement. Made of brass, nickel-plated. Size of illustration.

Price.....25 cents.

## BARGAINS IN SEPARATING FILES.



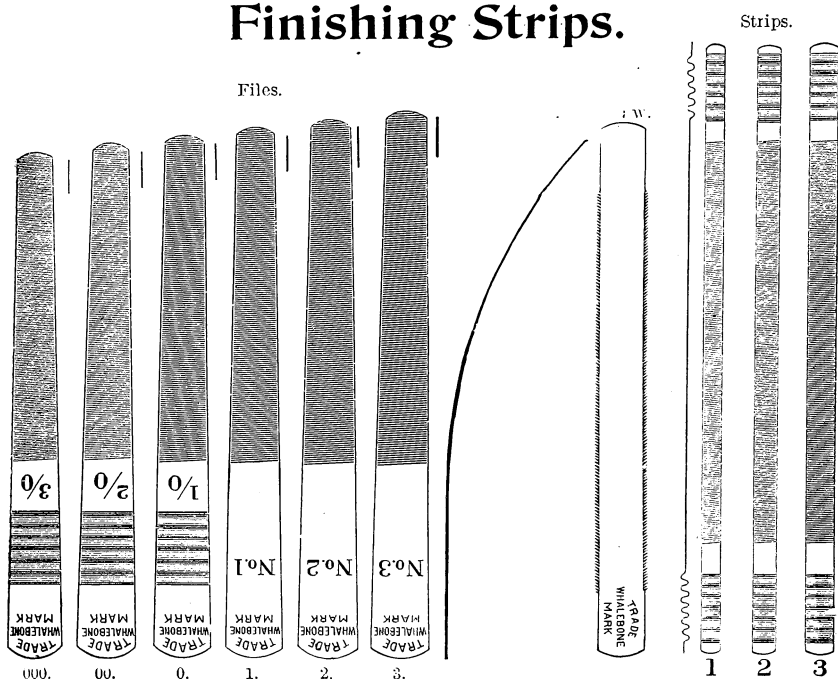
We are closing out our stock of ordinary Separating Files. These files are all new, and are only sold at these prices because we consider our Whalebone Files superior in every way. Sold only in dozen lots, either assorted or of a single number.

● — PRICES. — ●

Our Make, Nos. 000 to 6 .....per doz., 60 cents.  
Froid's Make, Nos. 000 to 3 ..... " 75 "

# “WHALEBONE”

## Separating Files and Saws, and Finishing Strips.



So named on account of their flexibility, and because they are practically non-breakable.

In order to bring these goods into more general use, we have placed the prices of our “WHALEBONE” SEPARATING FILES AND SAWS, AND FINISHING STRIPS, at the figures formerly prevailing for the inferior quality of files, etc.

Dentists who have used them have learned the value of these tough, flexible and almost non-breakable articles, and those who have not, ought to send us their next order for them, and thus get better satisfaction for their work.

### PRICES.

Separating Files.....	per dozen,	\$1.00
Separating Saws.....	“ “	.75
Finishing Strips .....	“ “	.75

THE WILMINGTON DENTAL M'FG CO.,

Philadelphia,

New York,

Chicago,

Washington.

8

Amt.

No.

**Date,**

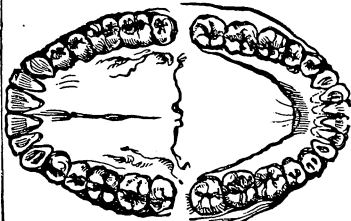
A blank sheet of white graph paper featuring a uniform grid of thin black horizontal and vertical lines. The grid covers the entire page, creating a series of small squares suitable for technical drawing or mathematics.

A diagram showing a circular arrangement of cells, likely representing a cross-section of a plant stem or a similar biological structure. The cells are arranged in a ring, with some cells containing internal structures (possibly nuclei or organelles). Two vertical double-headed arrows are positioned on the right side of the ring, indicating the height or thickness of the cells.

XXVI

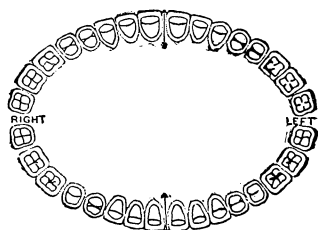


# NO. 2 BILL HEADS.

	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>No. ....</p> <p style="margin-top: 20px;">M .....</p> </div> <div style="width: 50%; text-align: center;"> <p>Dr. to .....</p> <p>SURGEON DENTIST.</p> </div> </div> <div style="margin-top: 20px;"> <p>189 .....</p> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Received Payment, .....</p> </div> <div style="width: 35%; text-align: right;"> <p>\$ .....</p> </div> </div>	

Price.....per hundred, 30 cents.

# DR. J. E. WOODWORTH'S DENTAL DAY-BOOK.



and printed, and firmly bound in cloth ; leather corners and back.

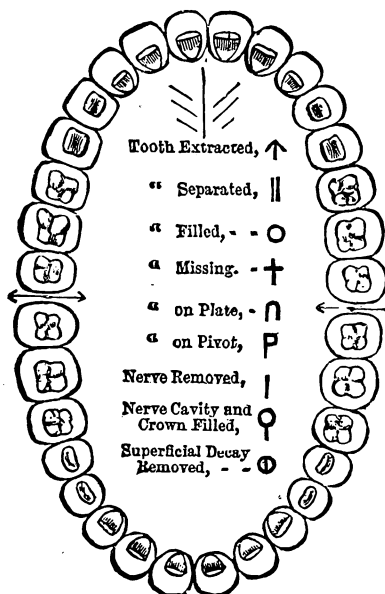
Sample pages, fully showing the neatness and utility of the book, sent on application.

## PRICES.

Bound in Cloth, 300 pages.....	\$2.50
"    "    Paper, 28    "    (Sample Copy).....	.25

THE WILMINGTON DENTAL M'F'G CO., Sole Agents.

## EXAMINATION TABLETS.

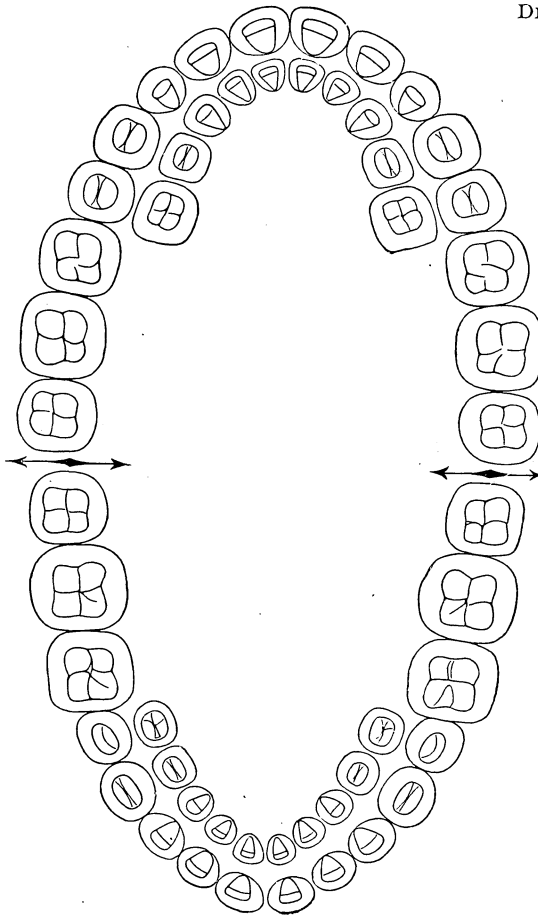


Very convenient for making memorandum of work done, or to be done. Slips have a ruled memorandum account on one side, on the other side is placed this cut, which, by proper marking, will give a full history of each case. Size of slips,  $5\frac{1}{2}$  inches long by  $3\frac{1}{2}$  inches wide.

## 100 SLIPS IN A PAD.

Price..... per pad, 30 cents.

# ALLPORT'S DENTAL LEDGER.



DR. ALLPORT designed this Ledger specially for the needs of the dental profession, and to this day it holds its own as being the simplest, yet most intelligible of any Ledger. A chart accompanies each account, and with proper marking will show the state of each mouth and the work that has been done. Each account is ruled for name and address, date, description of the different operations, charge for same and credit for amounts paid. Each book is suitably indexed.

The paper is of the best, and the ruling, printing and binding first-class.

## PRICES.

One account to a page, 300 pages, half Roan.....	\$2.00
Two accounts   "       172   "       "       .....	2.00
"       "       "       340   "       "       .....	3.00
"       "       "       340   "       half Turkey....	3.50

We suggest the use of our Examination Tablets and No. 4 Bill Heads with this Ledger, making a complete outfit.

# NO. 1 APPOINTMENT BOOK.

## MONDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## TUESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## WEDNESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

Can be used for any Year and commencing at any time.  
 Fine Leather Cover, Good Paper, Memorandum and Cash Account.  
 Calendar for Five Years.

### PRICES.

Without Tuck..... 50 cents.  
 With Tuck and Pocket..... 75 "

# THE DIAGRAM APPOINTMENT BOOK.

'The "Diagram" Appointment Book and Pocket Diary is a book suggested by practical dentists, and meets the wants of the profession. The "Diagram" Appointment Book is  $6\frac{3}{4} \times 4\frac{1}{4}$  inches. In the front it has calendars for three years, and a table to show the number of days from any day in one month to the same day in any other month. The new feature of the book combines with an appointment book a DIAGRAM for registering the work to be done, or to make memorandum of the work when finished, by having a diagram for each day, and the diagram in such shape as to be efficient and yet not make the book bulky and unhandy. There are one week's appointments on two opposite pages, and, therefore, six diagrams on same space. In the back of the book are pages for memoranda.

The book may be used without the Diagrams, and then is very similar to other appointment books. There can be no disappointment in the paper, ruling, printing or binding, as they are all first-class in every particular.

<b>TUESDAY.</b>													
<b>2. Mo. 1. O</b>													
8	Miss Frailey	1	P. W. Pack										
9		2	Edgar Thomas										
10	Bertie Cook	3											
11	Mrs Harmon	4	Paul Ross										
12		5											

The above is a fac-simile of one day's work in the "Diagram Appointment Book;" the appointments are made as usual, and the fillings are accurately noted on the diagram. No ledger or other memorandum is necessary for immediate use; at leisure the work may be copied into the large ledger, if desired. After each person's name a note may be made of the amount charged or paid. It will be seen that it is easy to keep a record on this diagram of the work of this day, or of any day, by letting the hour of appointment stand for that person in the diagram; thus the figure 8 in the diagram stands for Miss Frailey, the 8 o'clock appointment.

**Price in Cloth, 50 Cents.**

**Leather, 75 Cents.**

Just Issued !

# Anatomy of the Human Teeth,

By G. V. BLACK, M.D., D.D.S., Sc.D.

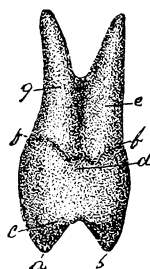
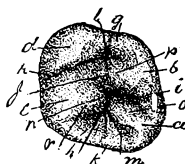
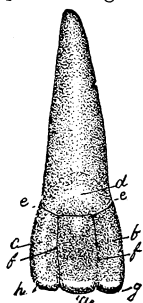
Third Edition.

171 pp.

Illustrated.

8vo.

WHEN the first edition of this great work appeared, the dental journals expressed themselves in unreserved praise on the profound scholarship displayed, the painstaking effort, and the skill and taste of execution.



SAMPLE ILLUSTRATIONS.

In the preface to the third edition, the author says :

"The continued favor with which this work is received by the profession has made another edition necessary. In preparing this the endeavor has been to improve the detail without changing the form. The principal changes will be found in the nomenclature. We have two distinct forms of dental nomenclature, the one used in comparative dental anatomy, the other in human dental anatomy for the purposes of dentistry. The one is adapted to the description of the teeth of the various animals, including the teeth of man when his teeth are treated of in the comparative sense; the other is suited to the teeth of man when the more exact and detailed descriptions necessary to operative dentistry are presented. These word forms necessarily become the basis of much of the nomenclature of operative dentistry. An extended examination of dental literature shows that, up to a recent period, writers on operative dentistry had named more than twice as many points on the teeth than had writers on dental anatomy. This fact shows the necessity that had existed for the more extended and systematized presentation of the subject of dental anatomy, and the closer systematization of its nomenclature. The reader will find the changes introduced limited to one new word, *axial*; two new word-forms, *occlusal* in place of *occluding*, and *incisal* in compound forms, and the completion of the systematization of the names of the angles of the teeth. This latter has required but few word changes in the text.

"Improvement has also been made in some of the descriptions, and a number of new illustrations have been added."

Price, Bound in Cloth (post-paid), \$2.50.

The Wilmington Dental M'f'g Co., Publishers,

PHILADELPHIA, NEW YORK, CHICAGO, WASHINGTON.

# Dental Jurisprudence,

By W. F. REHFUSS, D.D.S.,

(Octavo, 468 pp.,)

HAS aroused the profession to the importance of the subject, of which it treats in an exhaustive manner, and the fruits are already visible in the fact that the Dental Department of the University of New York has created a special chair on Dental Jurisprudence, and has adopted this as a text-book. It is now being adopted by a number of other dental colleges as a text-book.

The book is divided under forty-two heads, comprising: "Malpractice," "Compensation," "Responsibilities of Dentists for Error of Judgment," etc. All the "Patent Laws" referring to dentistry are given. Besides, a full appendix and supplement bring the laws of the several States and foreign countries up to date.

We Give Below a Few Short Extracts from the Many Flattering Reviews:

*International Dental Journal :*

"The author is to be congratulated that in this new field of labor he has been able to add something of positive value to the needs of his profession."

*Dental Cosmos :*

"We unhesitatingly commend the volume to all dental practitioners as one which cannot fail to be an important addition to any dental library, and a familiarity with its contents will be a safeguard in the conduct of dental practice."

*Dental Review :*

"This book furnishes, in ready form, information which goes farther to settle such problems, both by the decisions of eminent jurists in high courts and the opinions the author himself offers, than can be elsewhere found."

*Dental Office and Laboratory :*

"We compliment the author for finishing of a work, the subjects of which are seldom touched upon in dental literature, and doing so in a clear, distinct, and eloquent manner."

*Texas Dental Journal :*

"That this is a work the profession has long stood in need of, all will admit."

*Dominion Dental Journal :*

"We commend the work highly to every practicing dentist."

*Ohio Journal of Dental Science :*

"Altogether it is a work that no dentist should be without."

## PRICES.

Bound in Cloth (post-paid).....	\$2.50
" " Sheep " .....	3.50

THE WILMINGTON DENTAL M'FG CO., Publishers,  
1413 Filbert Street, Philadelphia, Pa.

XXXIII

## WANTS, FOR SALE, ETC.

**NOTE.**—Terms for advertising under above heading, ten cents per word, including captions "Wanted," "For Sale," etc., and address. Initials charged as words. Advertisements must reach us by the 20th of each month to insure insertion. Cash must accompany all advertisements.

THE WILMINGTON DENTAL M'FG CO., 1413 Filbert St., Philadelphia, Pa.

278—**Wanted.**—Position by graduate of University of Pennsylvania. Address, "H," care of The Wilmington Dental M'fg Co., Philadelphia.

279—**Wanted.**—Practice; terms cash. Address, John A. Moore, Defiance, Ohio.

280—**Wanted.**—Graduate of good habits, to take charge of practice. Address, "Dentist," Marathon, N. Y.

281—**For Sale.**—Practice and outfit at inventory; no opposition. Address, "Dentist," St. Ignace, Mich.

282—**For Sale.**—A \$3,000 cash dental practice, and furniture and outfit. Address, "S. R.," care of The Wilmington Dental M'fg Co., Philadelphia.

283—**For Sale.**—\$2,500 practice and outfit. Price, \$350. Population, 4,000. Address, 270 Lowry arcade, St. Paul, Minn.

284—**Wanted.**—To buy second-hand Land "Midget" furnace. Address, Geo. Schwartz, 23 Forty-seventh street, Chicago, Ill.

285—**For Sale.**—Fine practice of 7,000 people; no opposition. Retiring from business. Address, Dr. Calder, Stellarton, N. S.

286—**Wanted.**—A strictly competent and reliable dentist as assistant or partner. Finest climate in Colorado. Address, "N," Box 1512, Denver, Colo.

287—**For Sale.**—A ten years' practice, worth \$3,500; first-class dental equipments. \$800 cash. Fine New England town of 40,000. Address, "G. M.," care of The Wilmington Dental M'fg Co., Philadelphia.

288—**For Sale.**—Established city practice; complete outfit; splendid location; at invoice of outfit. Compelled to change climate. Investigate. Address, "Climate," care of The Wilmington Dental M'fg Co., Chicago, Ill.

289—**For Sale.**—A nice practice and complete outfit in the beautiful city of Los Angeles, Cal. Very cheap. This is a bargain for one seeking health. Address, "Bargain," care of The Wilmington Dental M'fg Co., Philadelphia.

290—**For Sale.**—An established business. Did \$4,500 cash last year; no credit at all. Located in city of 200,000 inhabitants. Reason for selling, owner has other business interests. Terms, \$1,200. Office has been run by assistants since established. Owner could double business in a year. Great bargain. Address, "Louisville," care of The Wilmington Dental M'fg Co., Philadelphia.

291—**Wanted.**—Position by graduate. Address, "Dentist," Stamford, Conn.

292—**Wanted.**—Graduate wants situation as assistant. Address, Geo. Breed, Corry, Pa.

293—**For Sale.**—\$4,000 practice for \$550 cash; fine city and climate. Address, "Florida," care of The Wilmington Dental M'fg Co., Philadelphia.

294—**For Sale.**—A good paying practice in western Pennsylvania. Address, "Penn.," care of The Wilmington Dental M'fg Co., Philadelphia.

295—**Wanted.**—Thoroughly competent assistant in a first-class practice. Address, 947 Dorchester street, Montreal, Canada.

296—**For Sale.**—Only dental office in city of 3,500. Address, "Z," care of The Wilmington Dental M'fg Co., Chicago, Ill.

297—**For Sale.**—\$5,000 practice; long established; city of 30,000; inventory \$1,000; price \$1,800; terms easy. Address, "Bonafide," care of The Wilmington Dental M'fg Co., Philadelphia.



## WANTS, FOR SALE, ETC.—Continued.

298—**For Sale.**—Well-paying, transferable practice; handsome outfit; reasonable price; little cash required. Address, "Charles," box 2002, New York.

299—**Wanted.**—All-around Dentist, and one operator and bridge-worker, and one mechanical. Address, "Albany Dentists," 1225 Chestnut St., Philadelphia.

300—**For Sale.**—Good equipped office for sale cheap at Wheeling, West Virginia; best location, and reason for selling can't get good man to run it; payments easy. Inquire, Dr. G. E. Mann, 154 W. 4th St., Cincinnati, Ohio.

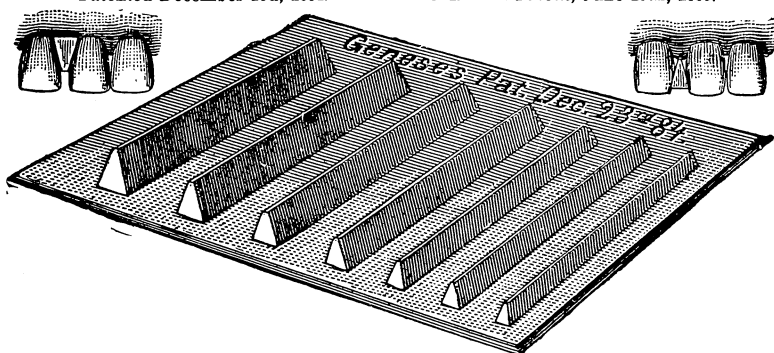
301—**For Sale.**—Well-established practice in large Ohio city; fine climate; good fees; rare chance for competent operator up in crown- and bridge-work. Address, "Dentist," care of The Wilmington Dental M'fg Co., Philadelphia.

## DR. GENESE'S GRADUATED RUBBER WEDGES.

### FOR SEPARATING TEETH.

Patented December 23d, 1884.

Canadian Patent, June 15th, 1885.



Will not change their form in moisture or ball up by the heat of the mouth. Made in steel moulds under great pressure in steam (not acid cured) and free from all materials likely to cause irritation to the tissues of the mouth, such as common rubber, particularly gas tubing, which is made with a large amount of sulphide of lead. They will always retain the wedge shape in the mouth and return to their original size, thereby enabling the practitioner to control the distance of the separations desired, and to accomplish it so gradually that the usual pain and injury to the gums is avoided, and time saved, by the patient being enabled to adjust the wedges before visiting the dentist.

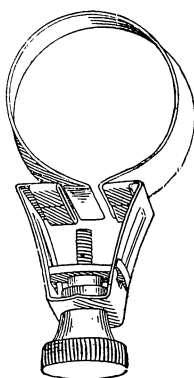
**Price, Assorted.....per box of 30 pieces, 50 cents.**

## STEAM CURED RUBBER SEPARATING STRIPS.

Made of pure Para rubber and free from odor. Put up in boxes of fifty strips of assorted sizes, square and oblong.

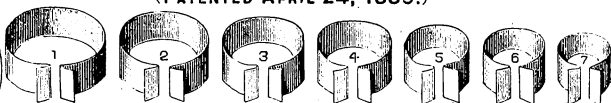
**Price, per box, assorted.....50 cents.**  
 " " large size.....75 "

XXXV



## Set No. 3 of Meister's Matrices.

(PATENTED APRIL 24, 1889.)



This set of Meister's Matrices realizes the highest conception in practice, and fills the wants of a large class of careful operators. Any band can be adjusted to appliance by means of slots shown on enlarged illustration.

Price, 1 Appliance and 7 Bands.....\$1.50.

**C. MEISTER & CO.,** Manufacturer of Dental Instruments,  
726 UNION ST., ALLENTOWN, PA.

Branch, S. E. Cor. Franklin and Diamond Sts., Philadelphia, Pa.

## Furman's Indestructible Dental Belt.

A Belt for your Engine and Lathe that  
will NOT BREAK or SLIP.

It is made of best piano wire, into a continuous coil, and in one unbroken piece. Saves strength, time, patience and money, and is warranted for five years.

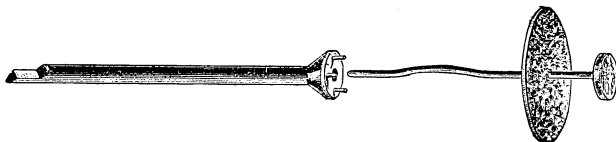
Belt No. 1, for Engine..... \$1.00

Belt No. 2, for Lathe..... .75

Is suitable for either electric or foot-power engine.

**I. W. FURMAN, D.D.S.,**  
BAYSHORE, L. I.

## THE Morgan=Maxfield Disk Mandrel.



PATENTED MARCH 21st, 1893.

The Best Disk-Carrier ever offered to the Profession.

PRICE (FOR ANY HAND-PIECE), 75 CTS.

ORDER FROM YOUR DEALER, or send to

**GEO. A. MAXFIELD, D.D.S.,** Holyoke, Mass.

**DR. THROCKMORTON'S**

## Removable Bridge Teeth and Teeth Without Plates.

In this patent I have simplified dentistry, and brought it to perfection, just where it belongs. Dentists having difficult partial cases can send them articulated, and I will attach the patent, and finish ready to fit in the mouth. Write for circular, name the county.

I give with each outfit, steel die, electrotypes, gold clasps, gold stay plate, for sample case, FREE! By express to your office to examine.

**J. A. THROCKMORTON, D.D.S.,** Sidney, Ohio.

## READ.

Do you want a splendid Local Anæsthetic? As good as there is on the market! Would you like to know what you are using? For one dollar I will send you one ounce, with instructions how to use it. If it suits you, I will sell the formula, and then you can make your own anæsthetic and know what you are injecting. You can save the price of this formula in a month's time. I have used it in hundreds of cases and absolutely no trouble.

Address, **Dr. C. H. CRANDALL,**  
ST. LOUIS, MICH.

# SPYER'S AUTOMATIC SUCTION CAVITY.

Fig. 1.

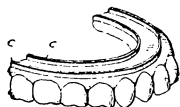


Fig. 2.

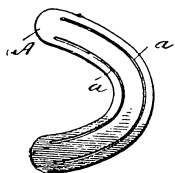
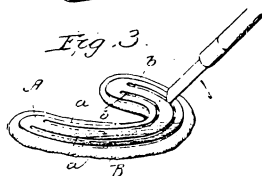


Fig. 3.



The only device ever invented that will enable the Dentist to construct a narrow plate with perfect adhesion.

Patented in the United States, England, France, Germany and Canada, September 4th, 1894.

Fig. 1 is a view of a finished plate. Fig. 2 is a view of the Automatic Suction Cavity. Fig. 3 shows the method of using the same.

The Suction Cavities come already shaped for the model; but it is necessary to trim down with curved scissors to meet the requirements of each particular case, always leaving a slight space between the slots or openings *a a*, Fig. 2, and the outer margin of the metal form.

The Suction Cavity is then secured by means of pins, or by varnish or mucilage, or any sticky substance, to the plaster model. A sharp instrument is then passed through the slots *a a*, Fig. 2, in the manner indicated in Fig. 3, and carried their entire length, forming parallel grooves in the plaster model. Then the base-plate is put on over the Suction Cavity, the teeth are set up as usual, the case flaked, packed and vulcanized in the usual way.

After vulcanizing, the metal form is removed. If the parallel ridges *c c*, Fig. 1, are too high after the plate is vulcanized, file them down to the desired height.

The finished plate will have along the edge of its palatal surface the parallel ridges *c c*, Fig. 1, besides the form of the suction, which provides strong adhesion from end to end of the plate.

PRICE, \$1.00 PER BOX.

Principal Office and Factory,

182 and 184 BROADWAY,

Seventh National Bank Building, NEW YORK.

JOSEPH SPYER, D.D.S.,

Inventor and Patentee,

THE WILMINGTON DENTAL M'FG CO., Agents.

<p>Your Patients will GROW AND Your Patients will INCREASE BY USING</p> 	<p>HARTFORD CAPITOL OBTUNDA HARTFORD DENTAL DEPOT HARTFORD, CONN.</p>	<p>OLDEST BEST BUY OF YOUR DEALER</p>
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THE HASKELL POST-GRADUATE SCHOOL

—OF—

PROSTHETIC DENTISTRY,

211 WABASH AVENUE,

L. P. HASKELL, President.

A. M. MARKLE, Secretary.

CHICAGO.

Now in its fifth year, has a large and well-equipped Laboratory, including Electric Motor for its Lathes, and is open continuously. Students may enter at any time.

Instruction given in all that pertains to Prosthetic Dentistry, including Metal Plates, selection and arrangement of Teeth, Crown and Bridge-work, Continuous Gum Work, Porcelain Inlays, and the Parmlay-Brown Porcelain Crowns and Bridges.

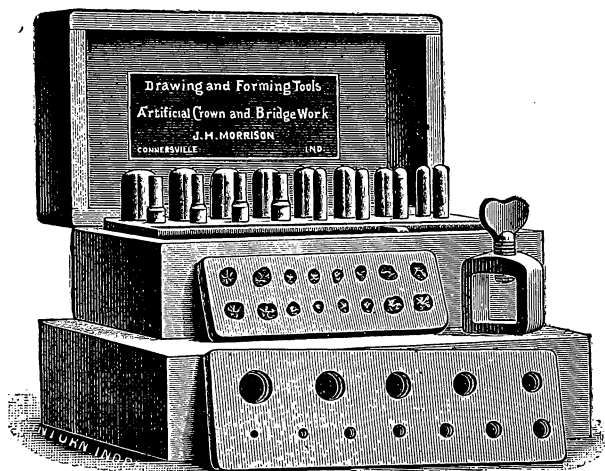
One month of technical instruction under the personal supervision of PROF. HASKELL and assistants has been found sufficient time for these specialties.

**Tuition, Fifty Dollars.**

The LABORATORY is prepared to construct Dentures of all kinds. Send for price-list.

XXXVII

# MORRISON'S CROWNING SYSTEM.



A most practical and simple method of making seamless cap crowns, seamless caps, collars and shells, for all forms of crown- and bridge-work.

Cuspid and incisor crowns easily made of absolutely perfect form.

A Seamless Contour Crown for any molar or

bicuspid can be made by any one of ordinary skill in FIVE MINUTES. "

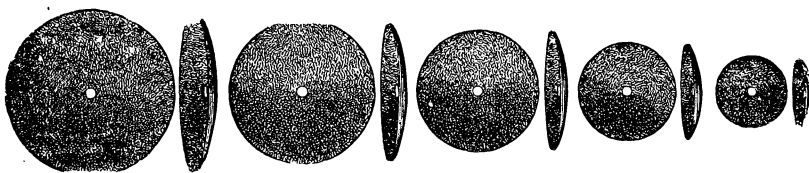
Price, Complete.....\$16.00

May be ordered of any dental depot, or of the Manufacturer,

**J. H. MORRISON,**

CONNERSVILLE, IND.

## TEAGUE'S DEPRESSED DISKS.



$\frac{7}{8}$  inch

$\frac{3}{4}$  inch.

$\frac{5}{8}$  inch.

$\frac{1}{2}$  inch.

$\frac{3}{8}$  inch.

These Disks are made to fit the convex surface of a tooth and thereby preserve the contour in dressing a filling. Cut from Sand Paper, Emery Paper, Cuttlefish Paper, Emery Cloth and Crocus Cloth. Coarse and fine grits of each, except Crocus Cloth; this is of a very fine grit for a lustrous polish. In addition to the above material, Disks of fine and coarse Garnet Paper are put in the boxes of Assorted Disks. A chart for accuracy in ordering Depressed Disks furnished on application.

Depressed Paper Disks,		in boxes of 100, 15 cts.	
"	Cloth	"	" 100, 35 "
"	Assorted	sizes $\frac{5}{8}$ in., $\frac{3}{4}$ in.,	" " 200, 30 "
"	"	" $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.,	" " 400, 60 "
"	"	" $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in., $\frac{7}{8}$ in.,	" " 500, 75 "

### OTHER SPECIALTIES:

Teague's Impression Compound,	4-lb. can, 50 cts.
" Sand Paper Strip Chuck,	25 "
" Cavity Cap Disks,	- per 100, 25 "
" Capsicum Plasters,	" 100, 50 "
" Arm-rest,	\$1.00

**SOLD BY THE TRADE,**

or by

**Dr. B. H. TEAGUE,**

**Aiken, S. C.**

XXXVIII

DR. J. G. WILSON'S

## Local Anæsthetic

FOR THE

# Painless Extraction of Teeth

AND ALL MINOR SURGERY

BY HYPODERMIC INJECTION.

Operate Immediately after the Injection.

It is ABSOLUTELY SAFE AND PAINLESS; can be used in any quantity, and is positively free from after effects.

NO SORE MOUTH,

NO SLOUGHING OF THE GUMS,

NO CONSTITUTIONAL OR TOXIC EFFECT.

### THE INGREDIENTS.

Wilson's Anæsthetic is an aqueous solution, containing less than one per cent. of *Cocaine*, combined with *Trinitrin*, *Hydro-naphthol*, and the antiseptic constituents of *Eucalyptus*, *Mentha Arvensis*, *Baptisia*, *Gaultheria*, *Thyme*, and *Benzo-boracic Acid*.

This combination makes a perfectly harmless, yet exceedingly effective, anæsthetic.

SENT BY MAIL ON RECEIPT OF PRICE.

1-ounce size.....	\$1.00
2-ounce size.....	2.00
10-ounce size.....	9.00

MANUFACTURED ONLY BY

CENTRAL CHEMICAL COMPANY,  
WELLSVILLE, NEW YORK.

FOR SALE BY

THE WILMINGTON DENTAL M'FG CO.,

1413 Filbert Street, Philadelphia; 12 East Twenty-third Street, New York; 78 State Street, Chicago; 1217 D Street, N. W., Washington, D. C.



who is using Carborundum we have not a word to say, *he* is as enthusiastic as we are; nothing could induce him to dispense with it, particularly if he's had some of the improved stock we've been talking about; would almost rather worry along without his dental engine than without Carborundum—that's what they tell us, and the demand seems to justify the assertion.

To the dentist who has *not* used Carborundum we say—wasting your own and patient's time—ask your neighbor about the cutting and wearing qualities of the wheels, then order some of the new stock. We are vitrifying all wheels a little softer now—wear a little more freely, and in doing so expose new crystals when those on the surface have become dulled through use; that's the theory of it; put it in practice.

Our new list shows 104 patterns—yours for the asking. Eight cents in stamps pays for a  $\frac{3}{8}$ -inch point to prove our claims. We would like to have it put to any test you please.

Our guarantee is well known.



**LEE S. SMITH & SON,**

**Sole Agents,**

**DENTAL DEPOT, - - 524 PENN AVE.,  
PITTSBURG, PA.**

THE CARBORUNDUM CO.,  
MANUFACTURERS,  
MONONGAHELA CITY, . . . PA.



## An Ounce of Gold

In the teeth isn't worth as much as a grain of precaution in the head. People appreciate points on the care of their teeth, When Coming From Their Dentist.

Such advice tends to fasten a dentist in the confidence of his patients. If you advise your patients to use

### THE PROPHYLACTIC TOOTH BRUSH

you are clinching their confidence in the most effective way. Let us mail you a batch of our Mission Books for distribution. They're dainty in every detail and full of wholesome advice.

FLORENCE MANUFACTURING CO.,  
Florence, Mass.

# STILL AHEAD!

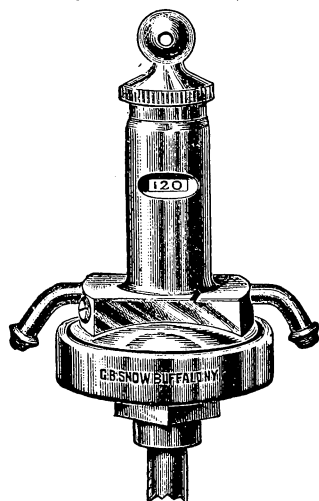
## SNOW'S GAS REGULATORS,

Patented Oct. 17th, Oct. 31st, Dec. 19th, 1893.

COMBINE MORE DESIRABLE QUALITIES THAN ANY OTHER.

They are SENSITIVE, responding quickly to slight changes in steam pressure. They are GAS TIGHT, being so securely packed as to obviate all danger of leakage. They are EASILY ADJUSTED to any pressure desired within the limits within which good vulcanizing is possible. They are ACCURATE, and can always be relied upon.

They have DROOPING NOZZLES for attachment of the rubber connecting tubes, so that under no circumstances will they fall over, collapse, and impede the flow of gas.



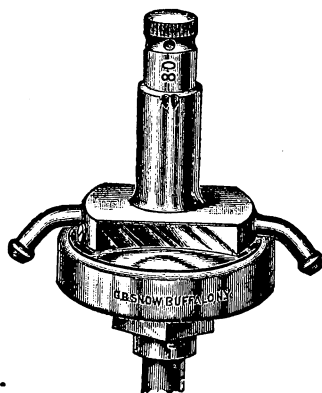
### Snow's Index Regulator

has a range of adjustment of from 40 to 140 lbs. (from 270 to 340 deg. as read from a mercury bath thermometer.) It is very sensitive, and can be depended upon to hold the temperature more accurately than any other regulator. Its adjustment is an easy matter and can be instantly changed as desired.

### Snow's 1894 Pattern Regulator

also has an index, with a range from 50 to 100 lbs.; not so great as that of the Index Regulator, but sufficient for ordinary uses. It is guaranteed to be a more satisfactory regulator than any other on sale, being only excelled by the Index Regulator.

Either the Index or 1894 Pattern Regulators are in stock with large gas nozzles (7-32 inch bore), and are recommended for large vulcanizers requiring an unusually free supply of gas.



### PRICES.

Index Gas Regulator, with Timing Attachment .....	\$9.50
1894 Pattern Gas Regulator, with Timing Attachment .....	7.50
Either Pattern, with Large Nozzles, extra .....	.50
Timing Attachment .....	3.50
Timing Attachment, with Large Nozzles .....	4.00

Manufactured only by

**GEORGE B. SNOW, Buffalo, N. Y.**



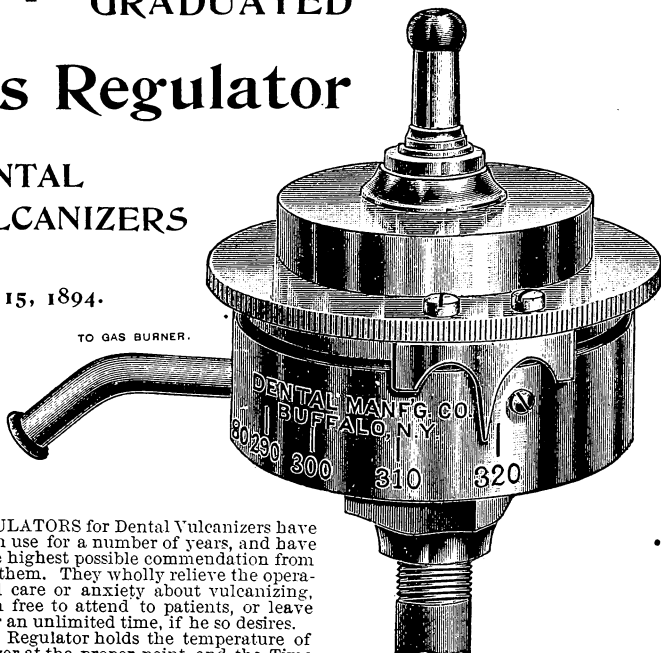
AN ENTIRELY NEW GAS REGULATOR, SUPERSEDING THE  
COOLIDGE-LEWIS REGULATOR, No. 4.

# No. 4 LEWIS GRADUATED

## Gas Regulator

For DENTAL  
VULCANIZERS

Patented  
May 15, 1894.



**G**AS REGULATORS for Dental Vulcanizers have been in use for a number of years, and have received the highest possible commendation from those using them. They wholly relieve the operator from all care or anxiety about vulcanizing, leaving him free to attend to patients, or leave the office for an unlimited time, if he so desires.

The Gas Regulator holds the temperature of the vulcanizer at the proper point, and the Time Regulator shuts off the gas at the proper time. Adjustment is easily made for a higher or lower temperature, or for a longer or shorter time, so that as complete control is had of the vulcanizing process as would be possible by the most careful attention, without the necessity of any oversight by the operator after the proper adjustments are made, and the gas under the vulcanizer lighted. Owing to the extreme regularity of the heat better results are obtained in vulcanizing than by the usual methods. In a word, no dentist who uses gas for vulcanizing can afford to be without a Gas Regulator if he values his time, comfort or safety.

The Buffalo Dental Manufacturing Co. have from time to time brought out several successful gas regulators, and from the experience gained in this special line of goods, have now been enabled to produce a gas regulator that is believed to be superior in every way to any heretofore constructed.

The mechanism of the No. 4 LEWIS GRADUATED GAS REGULATOR is entirely different from any in the market, and a trial of many months has proved it to be a remarkably perfect and reliable Regulator.

This Regulator is capable of being set to temperatures varying from 280° to 320°. To vulcanize at any of the degrees of temperature marked on the graduated base, all that is required is to turn the milled hand-plate till the pointer is over the degree desired. This can be done either before or after lighting the gas under the vulcanizer.

A small screw is inserted in the base which acts as a stop for the pointer, and prevents the Regulator from being set, either by design or accident, to maintain a higher temperature than the highest graduation on the base, thereby endangering the safety of the vulcanizer.

This Regulator requires no special adjustment after leaving the factory.

### PRICES.

Lewis Graduated Gas Regulator, No. 4, without Time Regulator, \$4.00

Lewis Graduated Gas Regulator, No. 4, with Time Regulator, - 8.00

MANUFACTURED ONLY BY

**BUFFALO DENTAL MANUFACTURING CO.,**

587 and 589 Main Street, Buffalo, N. Y., U. S. A.

If you want an AMALGAM that holds its color well, has good edge strength, and preserves the teeth, send **one dollar for a trial package of**

## **GILBERT'S CENTURY AMALGAM.**

**Price, per oz., \$2.00.**


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## **GILBERT'S SUPERIOR GUTTA-PERCHA**

is also a good tooth conservative. No better Gutta-percha sold.

**Price, per 1-2 oz., \$1.00 ; 1 oz., \$2.00.**

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Don't forget to use 

## **GILBERT'S NON-CONDUCTIVE TOOTH-LINING**

under all fillings, as it prevents shock from thermal change every time.

**Price, per bottle, 35 cts.**

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Gilbert's Zinc Phosphate,	- -	one color,	<b>\$1.00</b>
" " "	- -	two colors,	<b>1.50</b>
" Temporary Stopping,	- -	per oz.,	<b>.50</b>
" White Alloy ( <sup>A SUPERIOR</sup> AMALGAM),	- -	per 1/2-oz.,	<b>2.00</b>
" " " "	- -	per oz.,	<b>4.00</b>

Above are sent by mail when cash accompanies the order.

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**S. ELDRED GILBERT, D.D.S.,**

**1627 COLUMBIA AVE., PHILADELPHIA, PA.**

# STEURER'S PLASTIC GOLD.

This is chemically pure gold in a plastic state, which can be manipulated as easily as amalgam.

It will not "ball," but spreads until condensed. Denser fillings can be made by hand pressure than by any other form of gold with the mallet. Holds its color perfectly, and can be used in combination fillings with amalgam.

Beware of all imitations which have sprung up within the past few years on account of its great success here and abroad.

Price, per bottle, 1-16 oz., \$2.50. Cash with all orders.

Dr. J. A. STEURER,

Or Sold at all Dental Depots. 78 West 47th St., New York City.

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## UNIVERSITY \* OF \* MICHIGAN

### College of Dental Surgery.

The twentieth annual session begins October 2d, 1894, and closes June 27th, 1895.

The preliminary examination will be held Friday, September 28th, 1894. Three full courses of study of nine months' each are required for graduation.

The fees which must be paid in advance each year, are for non-residents of Michigan, \$65 first year; \$40 second year, and \$50 third year. These fees cover all expense of tuition, but not of materials used in laboratory courses.

The annual announcement containing full particulars will be sent to any one addressing a request to J. TAFT, Dean, Ann Arbor, Mich.

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## THE CINCINNATI COLLEGE OF DENTAL SURGERY.

New College Building and Equipments!

No. 209 W. COURT STREET,

Between Elm and Plum Streets.

**CLINICAL FACILITIES UNSURPASSED.**

FOR CATALOGUE AND OTHER INFORMATION ADDRESS,

G. S. Junkerman, M.D., D.D.S., Dean, or

Wm. T. McLean, M.D., D.D.S., Secretary.

Glenn Building, 187 Race Street, Cincinnati, Ohio.

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## DENTAL DEPARTMENT

OF THE

## Cleveland University of Medicine and Surgery,

62 HURON STREET, CLEVELAND, O.

**Fourth Annual Session begins Wednesday, September 19th, 1894,  
and continues six months.**

KENT B. WAITE, A.M., M.D.,  
REGISTRAR.

S. B. DEWEY, M.D., D.D.S.,  
DEAN.

# Birmingham Dental College,

BIRMINGHAM, ALA.,

Session 1894-95.

The regular Winter Session will begin October 2d, 1894, and continue until the last Thursday in March, 1895.

ALL THE BRANCHES APPERTAINING TO

## DENTAL SCIENCE AND ART

ARE THOROUGHLY TAUGHT.

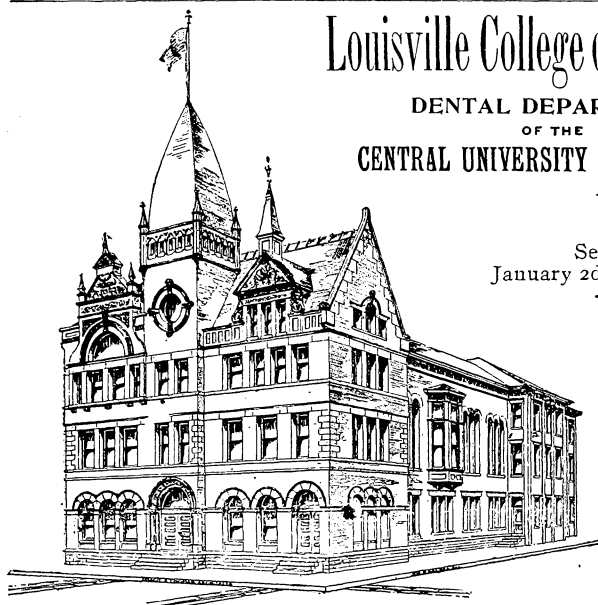
This College complies with all the rules and regulations of the National Association of Dental Faculties.

For Catalogues and other Information, address,

T. M. ALLEN, D.D.S., Dean,

P. O. Box 718.

Birmingham, Ala.



## Louisville College of Dentistry.

DENTAL DEPARTMENT  
OF THE

CENTRAL UNIVERSITY OF KENTUCKY.

Session  
January 2d to June 18th.

Course opens  
January 2d, and  
continues six  
months.

For catalogue  
address P. RICH-  
ARD TAYLOR,  
M.D., Dean,  
Louisville, Ky.

Also Hospital College of Medicine and Infirmary, opposite City Hospital, Louisville, Ky. Sessions held at same time as those above. Address, P. RICHARD TAYLOR, M.D., Dean, Louisville, Ky.

# The New York Dental School,

289 Fourth Avenue,



The Kennedy Building,

(Between Twenty-second and Twenty-third St

New York City, N. Y.

JANUARY, 1894.

The New York Dental School is an institution of the University of the State of New York, and is chartered by the Board of Regents.

The object of this school is to raise the standard of dental education, in accordance with the demands of the dental profession at large, by affording the students such practical and scientific instruction as will enable them to pass the examinations required in any State or country.

**THE REQUIREMENTS FOR ADMISSION ARE:** A preliminary examination by the Regents, or an Academic or High-School Diploma—the same as is necessary to enter any medical or law school in this State.\*

Duly qualified and registered dentists and physicians may be admitted to the Junior Class.

Students who have spent one or more years in other dental colleges will be duly credited for the time so applied.

Registered dentists and physicians may take special courses.

**QUALIFICATIONS FOR GRADUATION:** The student must be twenty-one years of age. He must have attended this or some other dental college recognized by the National Association of Dental Faculties, three full terms, of which the Senior term must have been spent in this school. Duly qualified and registered dentists and physicians who have studied two years in a reputable dental college, of which the Senior course shall have been in this school.

All students fulfilling the requirements prescribed in the curriculum, and passing a satisfactory examination before the examiners appointed by the Board of Regents of the University of the State of New York, will receive the degree of Doctor of Dental Surgery.

Women are admitted to this school.

The Fall and Winter Session will begin the first Monday in October of each year.

The Spring and Summer Session will begin the first Monday in April of each year.

For Prospectus and further information address,

**J. HOWARD REED, Secretary.**

\* Information relative to the Regents' examination may be found in the Prospectus of 1894.

## PENNSYLVANIA COLLEGE OF DENTAL SURGERY, PHILADELPHIA, PA.

This institution has removed to its new building, located on the

↔ **N. E. Cor. of Eleventh and Clinton Streets,** ↔

Below Spruce Street.

The structure complete is devoted exclusively to dental education. The operating rooms are so flooded with light from above and around that every corner is available for service. Lecture rooms, laboratories, class rooms, and quiz rooms offer every opportunity for the instruction of the student. These rooms cover an area of nearly eight thousand square feet of ground. All of the building is three stories in height, with a portion four stories high for the accommodation of a large and well ventilated dissecting room.

*The Thirty-ninth Regular Winter Session*

**Opens October 1st, 1894, and Continues until March 8th, 1895.**

The Spring and Summer Course commences March 12th, and closes June 30th. This is eminently practical, the students' time being devoted almost exclusively to clinical work.

**WOMEN ADMITTED.**

For further information, address,

**DR. C. N. PEIRCE, Dean,**  
1413 Walnut St., Philadelphia, Pa.



# American

COLLEGE OF  
DENTAL SURGERY,

441 Wabash Avenue,

CHICAGO, ILL.

Fall and Winter Sessions of Lectures and  
Clinics, with Infirmary Practice,

✻ **October 2d to April 2d.** ✻

Post-graduate Courses open from April 1st  
to October 1st.

For catalogues and circulars, address,

THEO. MENGES, D. D. S.,

441 Wabash Avenue, Chicago, Ill.

